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Final Report

Anderson Mesa Landscape Scale Assessment

Mormon Lake, Mogollon Rim, and Peaks Ranger District, Coconino National Forest
Coconino County, Arizona

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Background

The Anderson Mesa Landscape Assessment is a planning effort to examine the existing conditions, desired future conditions, and possible management strategies for managing the Anderson Mesa portion of the Coconino National Forest. Anderson Mesa is a large area covering approximately 263,500 acres of diverse vegetation, diverse wildlife species, a large and unique wetland component, as well as a multitude of recreational opportunities and is located directly southeast of Flagstaff and stretches to the eastern Forest boundary of the Coconino National Forest (see Figure 1).

The Anderson Mesa Landscape Scale Assessment (AMLSA) was first proposed as a landscape scale assessment in 1999. Interest from the public regarding Management Indicator Species, grasslands and wetland areas on Anderson Mesa was increasing from the original proposed analysis date in 1999. Increased interest for the Anderson Mesa is evidenced by a year and a half of facilitated discussions with seven other organizations and the U.S. Institute for Conflict Resolution over antelope and cattle grazing. This facilitated process resulted in an Arizona Game and Fish Department document titled the 'Anderson Mesa Pronghorn Plans' which identifies strategies and tasks related to pronghorn on the mesa. Additional interest in the Anderson Mesa area is displayed through Arizona Wildlife Federation lawsuit on Management Indicator Species, grazing and riparian issues. The increased public interest, as well as the following reasons, is why this Assessment is so timely.

- Populations of two Management Indicator Species (MIS), pronghorn antelope and deer, show declining trends.
- Dispersed and developed recreational use is increasing.
- Newly acquired lands, including Hay Lake, have no existing management direction in the FLMP.
- The majority of ephemeral wetlands on the Forest are on the Mesa. These were not given a lot of emphasis during the development of the FLMP.
- Because of the unique ecological, social, historical, and cultural features of the mesa, there is an over-arching need to understand functions, processes, ecological connections and how these relate to each other, human uses, climate and future management of the mesa.

The AMLSA officially begin as a project until November of 2002 when a project initiation letter was sent to select members of the Forest Service outlining the initiation of the project and the project objectives. The original project objectives as outlined in the project initiation letter were as follows:

- Identify opportunities (projects) that will help move Anderson Mesa from its existing condition to a desired future condition. These conditions will include various aspects of ecosystem health as well as public values and uses.

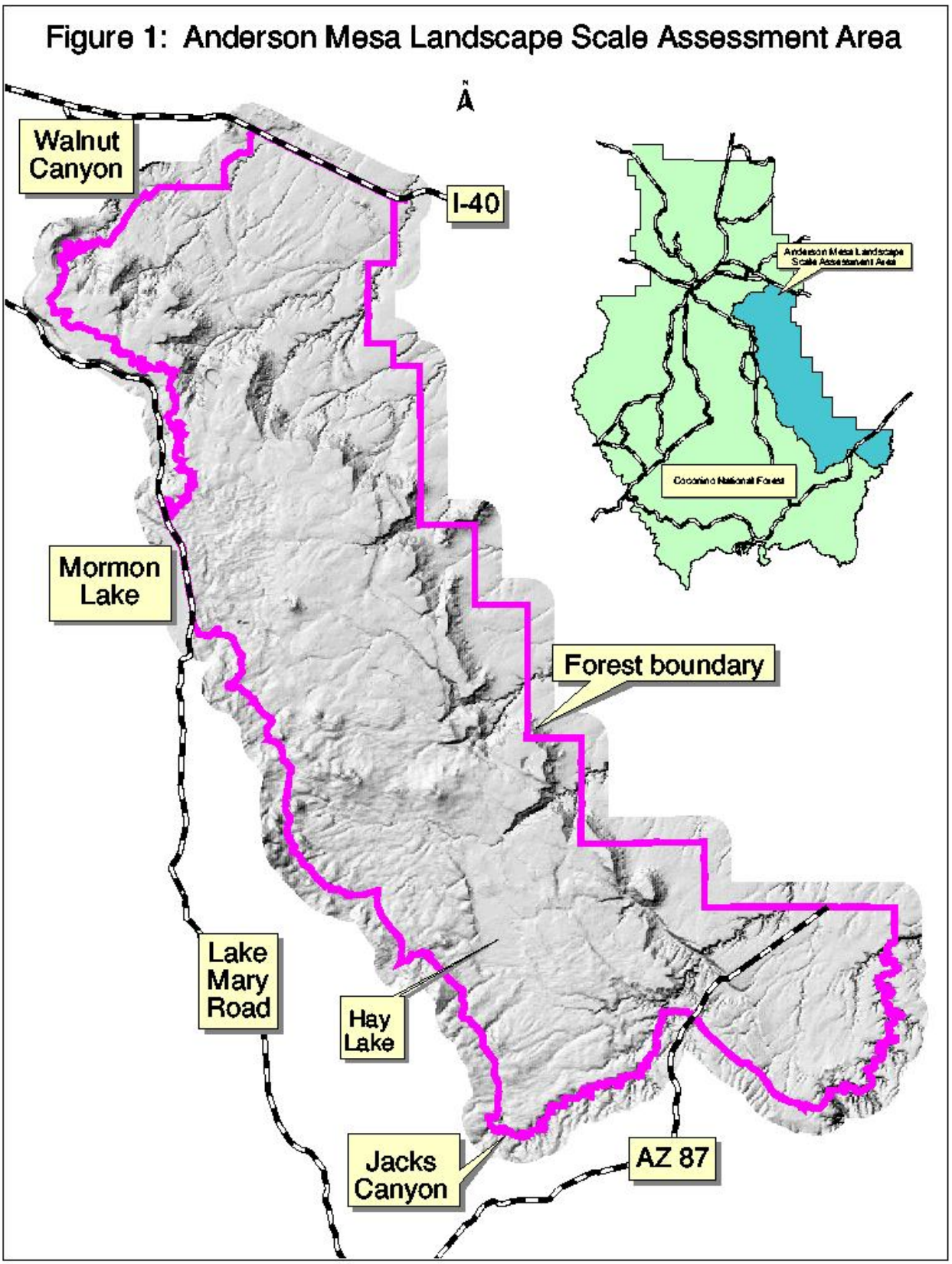


Figure 1: Anderson Mesa Landscape Scale Assessment Area
Walnut Canyon
I-40
Mormon Lake
Forest boundary
Lake Mary Road
Hay Lake
Jacks Canyon
AZ 87
Coconino National Forest

- Identify amendments to the Coconino Forest Land Management Plan that may be appropriate. This will be accomplished through a thorough review and validation of the existing Coconino Land Management Plan Management Areas. This review may identify the need for some additional resource or human dimension information and will identify the need for changes in the Forest Land Management Plan. This review may identify spin-off tasks and projects – such as a Roads Analysis Plan.
- Develop a recreation management strategy with partner agencies (National Resource Conservation Service, Arizona Game and Fish) for the Hay Lake Complex.

To meet these objectives, the Forest Service began meeting in November of 2002. The Forest Service began examining the existing conditions of the Anderson Mesa area at this time. In order to accomplish this task, the Forest Service created working groups to tackle individual components of the mesa. The working groups formed explored the following components that exist on the Mesa today: 1) Vegetation; 2) Wildlife; 3) Riparian/Wetland; 4) Recreation; and 5) Hay Lake.

Concurrent with the gathering of existing condition data the Forest Service, in cooperation with Greg Bourne,[1]created a public strategy as a means to get input from citizens as well as from local governmental agencies. Components of the public strategy were a series of public workshops to kick off the process, the creation of a Citizens Working Group (CWG), and public meetings to disclose the final product. The makeup of the CWG would represent a broad cross section of values that have interest in the management of Anderson Mesa. The intent of using the CWG was twofold. First, the CWG would give the Forest Service the ability to hear different values concerning Anderson Mesa. Second, the CWG would learn the different values that exist among different interest on the Mesa.

In April of 2003, the Forest Service held two public workshops, one in Flagstaff and one at Happy Jack Lodge, to gather input from the public on existing conditions and to gather the publics' values on the Anderson Mesa area. At these meetings the Forest Service began the process of identifying potential members for the CWG, gathered input on existing conditions and gathered information about how people use the Mesa. The Forest Service took this information and updated existing conditions, summarized existing values of the Mesa and created the CWG (Table 1 displays the final members of the CWG and the organizations they represent). Additional input for the Anderson Mesa LSA was solicited by the Forest Service from local governmental agencies. These agencies include the following: Arizona Game and Fish Department, United States Geological Survey, Northern Arizona University, United States Fish and Wildlife Service, Coconino County, City of Flagstaff, National Resource Conservation Service and the National Park Service

[1] Greg Bourne is a facilitator with the U.S. Institute for Conflict Resolution who facilitated the antelope facilited meetings mentioned above, and was hired by the US Forest Service to facilitate the Anderson Mesa LSA.

The crux of the work from this point on in the project involved Forest Service specialists, the CWG, and local governmental agencies. The Forest Service held its first meeting with the CWG on January 22, 2004 with the focus on receiving input on existing

Table 1: Final Citizens Working Group

Individual	Organization
Tom Britt	Rocky Mountain Elk Foundation
Don Martin	Wildlife Conservation Council
Chuck Jacobs	Rim Country 4 Wheelers
Kim Crumbo	Grand Canyon Wildlands Council
Don Farmer	Arizona Wildlife Federation
David E. Brown	Arizona Antelope Foundation
Norman Honanie	The Hopi Tribe
Jeff McCreary	Ducks Unlimited
Elaine Morrall	Northern Arizona Audubon Society
Bob Prosser	Bar T Bar Ranch
Norman Wallen	The Diablo Trust
Clark Dierks	Arizona Flycasters
Kyle Roseborrough	Northern AZ Climbers Coalition

conditions. The next CWG meeting took place on March 11, 2004 and focused on finalizing existing conditions and examining desired conditions. The next two CWG meetings, June 15 and August 27, respectively, focused on desired conditions and potential management strategies. The results of these meetings are summarized in the remainder of this report.

The Public Strategy outlined that once the final report was completed, that there would be a final set of public meetings to display the results of the AMLSA. Due to funding considerations, this step of the process will not be completed. The final report will be used as a guidance document for further actions to occur on Anderson Mesa. This document is not a Decision document (EA, EIS, etc.) with proposed projects, but rather a compilation of data that identifies the existing conditions that occur on the Mesa, the desired conditions that occur on the Mesa, and a set of possible management actions to move existing conditions towards the desired condition when there is a disconnect between the two, and a check on Forest Plan consistency of the proposed management actions.

Existing Conditions for the Anderson Mesa Landscape Assessment Area

The Vegetation Working Group examined vegetative conditions across the Mesa through a variety of data sources. These include previous surveys (most notably, the Terrestrial Ecosystem Survey for the Coconino National Forest), range clusters, Northern Arizona University's FERA database, as well as on-site visits. The Working Group identified eight unique vegetative zones within the Anderson Mesa LSA boundaries, they include the following: 1) Pinyon-juniper woodland; 2) Western wheat-blue grama grasslands; 3) Montane meadows; 4) Pinyon-Juniper/Blue Grama woodland; 5) Ponderosa Pine/Gambel Oak/Mixed Conifer; 6) Non-stocked P-J woodland; and 7) Wet meadows; 8) and Ponderosa Pine/PJ/AZ Fescue/Blue Grama (see Figure 2).

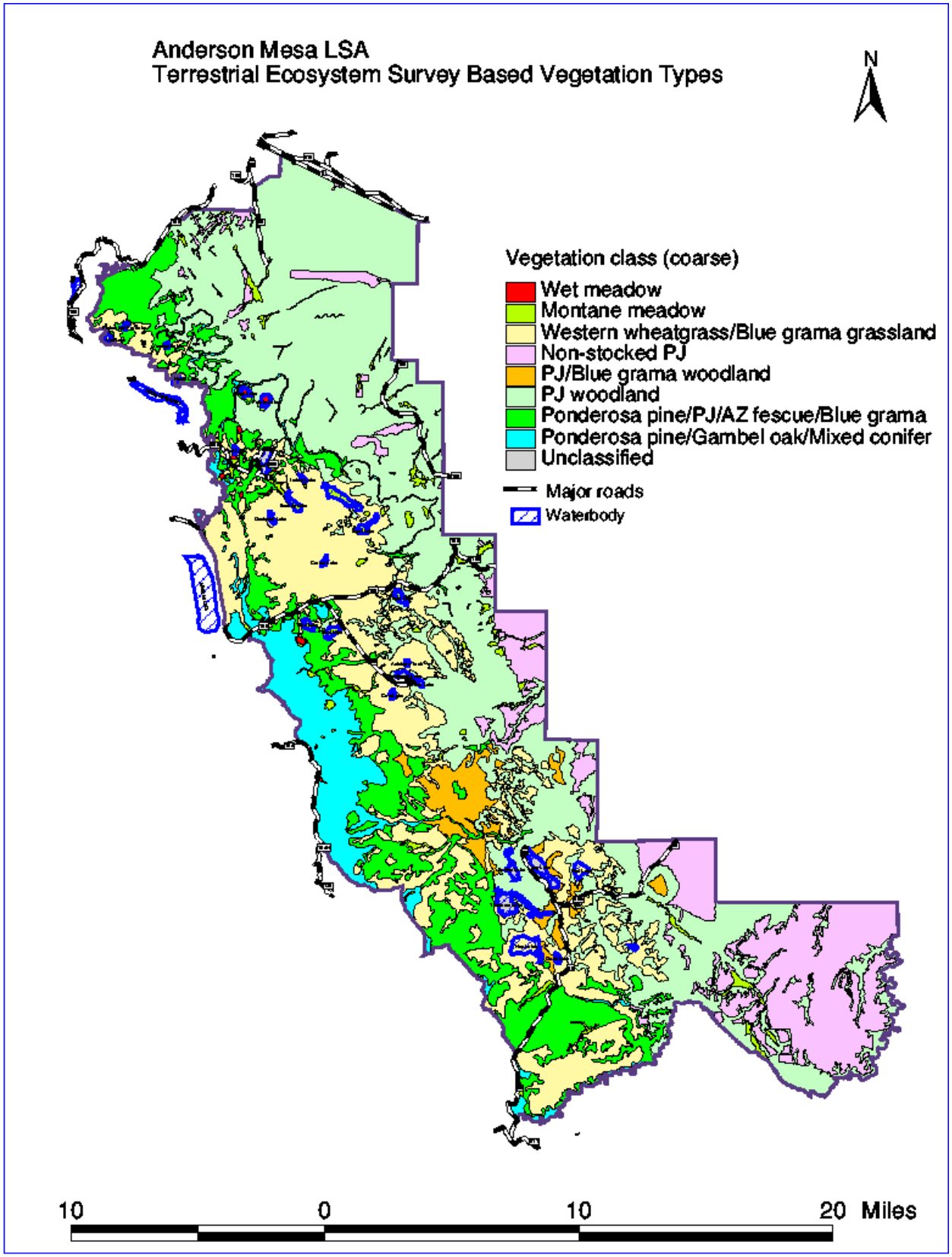
These vegetation groups are the basis for the existing condition summary for all resource areas. Many of the recreational and cultural resource items exist across the entire Anderson Mesa Landscape Analysis Area and cannot be easily split into individual vegetation types. Where possible, recreation existing conditions were assigned to a particular vegetation zone. Those recreation items that could not be split easily are discussed at existing conditions common to all vegetation types. The Hay Lake area is also discussed separately from specific vegetative zones.

Existing Conditions Common to All Vegetation Zones

The following are recreation-related existing conditions that apply across the entire landscape. The current inventory of ROS classes for the mesa area does not reflect today's actual conditions, values and uses. In addition, the current inventory for visual/scenery management for the mesa area does not reflect the values that are placed on the mesa today. Current visual quality objectives for the mesa allow for substantial modification of the landscape without meaningful consideration of scenery. Current Visual Quality Objectives have not been updated to new scenery management system and is 20 to 25 years old.

In addition to the traditional uses of the area, e.g. hunting, driving for pleasure, fishing, and camping, newer uses of the mesa (and some older ones) are increasing, including mountain biking, rock climbing, horseback riding, antler collecting, organized group activities, OHV driving, hiking, pinion nut gathering, wildlife viewing, geo-caching, exercising, and others, with resultant adverse impacts to soils, roads, user experience, archaeological resources, wildlife, etc.

Figure 2. Anderson Mesa TES Based Vegetation Classifications.



Interpretation and environmental education are not used effectively on the mesa to gain public understanding and cooperation in order to achieve agency management goals. Some research is ongoing on site that applies to agency management goals.

Several cultures co-existed within the analysis area and this cross-road of past cultures provides a wide variety and a high number of cultural resources sites, especially in the pinyon-juniper vegetation zone. Lack of archaeological interpretation and high site densities occur across the Mesa. This includes most fire sensitive archaeological sites that have no recent condition data. Some site damage is occurring and there is a general lack of knowledge about cultural resource sites that may be leading to increased damage in the future across the LSA area. In addition, there is a lack of ethnographic information for the area and currently no natural resources are currently interpreted from the Native American perspective.

Noxious weeds and invasive exotic species (both annual and perennial species) do exist in and near the Assessment area. Heaviest weed infestations occur along highways, major roads and utility corridors

Pinyon-Juniper Woodland Existing Conditions

The Pinyon-juniper woodland comprises approximately 110,000 acres and is the dominant vegetative types that occur across Anderson Mesa. As a general rule, there is poor composition and a low diversity of shrubs, grasses and forbs across the Pinyon-juniper woodland when compared with the capability of each site. This is especially true when pinyon-juniper canopy covers exceed 40%, which occurs roughly 42,400 acres of the AMLSA. Where understories do exist, the species mix is usually dominated by warm season grasses. Additionally, pinyon pine tree distribution has decreases due to drought, beetle-kill and fire. This is especially pronounced in the larger sized pinyon pine trees. Drought may also play a role in the composition and diversity of understory vegetation as well. Soil conditions on this vegetation type display about 28,500 acres of satisfactory/unsatisfactory and about 67,500 acres as unsatisfactory, primarily due to heavy canopies, a lack of nutrient cycling and the presence of compaction. In addition, there area roughly 14,000 acres that are satisfactory and are inherently unstable due to slope or high concentrations of calcium carbonate in the soil profile.

The fire regime in most of this type has been altered with multiple, missed fire intervals occurring over the last 100 years with fire condition classes a 2 to 3. The increase in dead fuels from drought and beetle-killed trees in pinyon-pine has increased the potential for large, stand replacing fires. This condition exists adjacent to Walnut Canyon National Monument and is a concern to the National Park Service that this may affect habitat components within the Monument. Fire in younger growth pinyon-juniper is generally contained to single trees and will not spread due to the lack of surface fuels and large woody debris. Currently, vegetative conditions exist on the north-northeastern slopes of AM that have high fire risk that may result in un-natural intense wildfires. Resulting fires may have devastating effects on the canyon riparian corridor and MSO habitat within the National Monument.

Deer populations are currently declining across the forest, and is variable on Anderson Mesa, with the mule deer fawn-to-doe ratio slightly declining on Anderson Mesa. This vegetation type offers key habitat components both through cover and through the potential to produce browse. The increase in pinyon-juniper canopy cover is providing adequate cover, but is competing with browse species production. Abundant roads (2.5 miles/square mile) occur throughout the analysis area in mule deer habitat that may be disturbing deer, especially during fawning and the breeding. For the entire vegetative type, road densities are 1.8 miles/square mile.

There are a number of vegetative impediments to wildlife movement that occur within this vegetative type due to thick canopy cover. Animal movement from Anderson Mesa to the state lands to the east and north, and from Anderson Mesa to Walnut Canyon National Monument occurs within this vegetation type.

Other wildlife species that are key to this type include, but are not limited to Arynxa giant skipper (Forest sensitive), Black-throated gray warbler (migratory bird species of concern), Early elfin (Forest sensitive), Elk (management indicator species for early seral stage), Freeman's agave borer (Forest sensitive), Gray flycatcher (migratory bird species of concern), Gray vireo (migratory bird species of concern), Juniper (plain) titmouse (management indicator species for late seral stage and snag component), Mule deer (management indicator species for early seral stage), Neumogen giant skipper (Forest sensitive), and the Pinyon jay (migratory bird species of concern).

Anecdotal evidence suggests drying up of springs. The evidence on springs is not clear if it is climate related or management related, or both. Some drying of springs and streams may be tied to long-term drought and the lack of recharge from this climatic condition. Canopy covers in excess of 40% occur adjacent to most spring sites and this may be affecting spring flow through interception of snow in canopies and through evapotranspiration during the growing season.

The trail to the Jacks Canyon Climbing area occurs within portions of the vegetation type. One major access trail exists, with 2-3 user created trails developing. Access points limit physical access to these riparian areas.

Three Inventoried Roadless Areas (IRA's) exist in the analysis area; at Padre Canyon, Upper Jacks Canyon, and Lower Jacks Canyon. Management oversight to limit the establishment of new tracks and roads into the area is sporadic, and a few new routes have been located in the areas, particularly in Padre Canyon IRA.

Developed recreation sites that occur within this vegetation zone include a portion of the Arizona Trail, a portion of the trail and parking for the Jacks Canyon Climbing area, and three of the four developed trailheads along the Arizona Trail (Marshall Lake, Prime Lake, FR82) need surfacing materials for parking, signing, fencing and interpretive signing for resource protection and customer satisfaction. The Horse Lake Trailhead, which is just outside the LSA boundary, is in good condition, but needs additional interpretive signing. Elks Campground is a minimally developed group campsite that also

occurs within this vegetation type. The Arizona Trail, of state and national significance, is partially completed, and is without adequate interpretive improvements.

Dispersed camping sites are too dense in some areas, and have associated resource problems such as vegetation damage, soil erosion, litter, sanitation, etc. Use is expanding to all parts of the area due to increase population demands. Problem areas exist within this vegetation type along Long Lake Road (Forest Road 82) and portions of the 125 road to Kinnikinick Lake, as well as the Marshall Lake Road that is directly adjacent to the analysis area. With the associated overuse, litter and sanitation problems are occurring. Little or no interpretation is available for user education. On the other end of the use spectrum, currently, few backcountry dispersed camping sites are well established. Anticipated population increases are expected to result in an increase in demand for backcountry-dispersed recreation, for both motorized and non-motorized activities. This vegetation type has the best potential for providing these opportunities. The Anderson Mesa area is a highly valued recreation, wildlife and archaeology resource area for primitive recreation opportunities; few developed-end ROS class acres exist in the pinyon-juniper woodland area.

Thirty to forty outfitter and guide special use permits (SUA's) are permitted in the area each year, without controls on access routes, timing of use, etc., resulting in damage to resources, particularly at primary camping areas and to roads when they are wet. In addition, seasonal big game hunting is very popular in the area, and a significant number of tags are permitted each year in the area, without controls on access routes, the timing of hunts, repair of resource damage, etc. This often results in long-term, unacceptable damage to resources, particularly at primary camping areas and to area roads and soils when they are wet. Currently, all of the approximately 300 miles of existing roads are available for use for these activities.

Un-managed OHV (including, but not limited to, recreational use, antler gathering, and fuelwood gathering) use of the mesa has increased significantly in recent years and is causing wildlife disturbance, road and soil damage, reduced quality user experience, etc.. Impacts of large 4X4 vehicles can be great on muddy roads. Usually, ATV impacts are less than larger 4X4 vehicles. Exceptions to this are when ATV use is concentrated over the same trail, or on repetitive hill climbs. Currently, no motorized trails are identified at this time. Current regulations state that the roughly 110,000 acres of the pj woodland vegetation type is open for vehicular travel unless posted as closed.

The Palatkwapi/Chavez trail traverses this vegetation zone. Currently, there is incomplete survey of Palatkwapi/Chavez Trail and a lack of interpretation of the Palatkwapi/Chavez Trail.

Private land in-holdings exist within the analysis area, and may threaten future management options if they are developed; potentially adversely affecting wildlife, archaeology, soil and water, recreation and other resource values.

Western Wheat-Blue Grama Grasslands Existing Conditions

The largest component of grasslands on the Coconino National Forest occurs within this vegetative zone on Anderson Mesa. The western wheat-blue grama grasslands are comprised of approximately 55,000 acres and are widely dispersed throughout the Mesa. The ephemeral and temporary wetlands also occur within this vegetation zone. As a general rule, there is poor composition and low diversity of grasses and forbs across this zone when compared to the capability of each site. Warm season grasses generally dominate this vegetation type. Vegetative ground cover is also low across this landscape component. Some conifer encroachment is occurring within this vegetative type. Again, drought may also play a role in the composition and diversity of species currently displayed across this landscape component. Soil conditions on this vegetation type display about 34,700 acres of satisfactory/unsatisfactory and about 20,400 acres as unsatisfactory, primarily due to a lack of nutrient cycling and the presence of compaction.

Currently, surface fire will not carry within this vegetation zone until herbaceous component is increased over current levels. The fire regime in the western wheat-blue grama grasslands has been altered due to multiple, missed, fire intervals stemming from reduced herbaceous cover with fire condition classes a 2 to 3. There is the potential for increasing severity of fires due to woody fuel accumulation occurring within this vegetation zone.

This vegetation type is the primary habitat type for pronghorn antelope across the mesa, a management indicator species for early and late seral stages. Currently, grassland and meadow seral stage classifications are presently unknown in this type.

Current road densities for the entire vegetation type and potential pronghorn antelope habitat are 2.1 miles/ square mile of roads. Disturbance from traffic on roads can negatively affect a wide variety of wildlife, including pronghorn antelope. A seasonal closure for vehicular traffic is currently in place on a large portion of this vegetation type to minimize impact to pronghorn antelope fawning from May to the end of June. Pronghorn antelope populations have been dropping over the past three decades, but have shown slight increases the last two years. Competition for resources exists between antelope and other grazing ungulates.

Other wildlife species that are key to this type include, but are not limited to American peregrine falcon (Forest sensitive), Arynxa giant skipper (Forest sensitive), Black-footed ferret (federally listed as endangered), Burrowing owl (migratory bird species of concern), Early elfin (Forest sensitive), Elk (management indicator species for early seral stage of montane meadows), Ferruginous hawk (migratory bird species of concern), Freeman's agave borer (Forest sensitive), Navajo Mountain Mexican vole (Forest sensitive), Neumogen giant skipper (Forest sensitive), Pronghorn antelope (management indicator species for early and late seral stages), Swainson's hawk (migratory bird species of concern), and prairie dogs. A portion of this habitat type is contained in the Anderson Mesa Important Birding Area that has been designated by the Audubon Society.

The dominant plants in temporary wetlands are usually foxtail barley, western wheatgrass and annuals. Inundation by water varies by climatic regime. During droughts, many of

these sites do not become inundated at all, and during wet cycles, these sites can become inundated by water form 2 to 6 weeks. The temporary wetlands are highly variable in plant production from year-to-year, based on the climatic regime and the period of inundation. Therefore, there is great natural variability of wetland plant production potential with each wetland class.. Habitat potential in these sites is limited, but when inundated use by waterfowl is related to pair water, high density invertebrate foods, and molting in the early spring. Dominant plants in ephemeral wetlands are usually annuals grass and forbs- habitat potential in these sites are limited.

The current wetland Proper Functioning Condition (PFC) classes of temporary and ephemeral wetlands are: 5 wetland in PFC and 3 wetlands are Functional at-risk. A wetland that is currently at PFC could drop to functional at-risk if the site is grazed to the extent that suitable biomass is not left on-site to maintain nutrient cycling within the wetland. Biomass production on dry years is basically non-existent within ephemeral wetlands, therefore, biomass production cannot be increased with or without grazing in ephemeral wetland types in during dry years.

Thirty to forty outfitter and guide special use permits (SUA's) are permitted in the area each year, without controls on access routes, timing of use, etc., resulting in damage to resources, particularly at primary camping areas and to roads when they are wet. In addition, seasonal big game hunting is very popular in the area, and a significant number of tags are permitted each year in the area, without controls on access routes, the timing of hunts, repair of resource damage, etc. This often results in long-term, unacceptable damage to resources, particularly at primary camping areas and to area roads and soils when they are wet. Currently, all of the approximately 180 miles of existing roads are available for use for these activities.

Un-managed OHV (including, but not limited to, recreational use, antler gathering, and fuelwood gathering) use of the mesa has increased significantly in recent years and is causing wildlife disturbance, road and soil damage, reduced quality user experience, etc.. Impacts of large 4X4 vehicles can be great on muddy roads. Usually, ATV impacts are less than larger 4X4 vehicles. Exceptions to this are when ATV use is concentrated over the same trail, or on repetitive hill climbs. Currently, no motorized trails are identified at this time. Current regulations state that the roughly 55,000 acres of the western wheatgrass/blue grama grassland vegetation type is open for vehicular travel unless posted as closed.

The Palatkwapi/Chavez trail traverses this vegetation zone. Currently, there is incomplete survey of Palatkwapi/Chavez Trail and a lack of interpretation of the Palatkwapi/Chavez Trail.

Private land in-holdings exist within the analysis area, and may threaten future management options if they are developed; potentially adversely affecting wildlife, archaeology, soil and water, recreation and other resource values.

Montane Meadows Existing Conditions

Montane meadows comprise approximately 5,500 acres across Anderson Mesa. As a general rule, species composition and diversity are generally low across the montane meadows when compared to the capability of each site. Warm season grasses generally dominate this vegetation type. Vegetative ground cover is also low across this landscape component. There is some encroachment of conifers into this vegetation type also. Drought may also play a role in the composition and diversity of species currently displayed across this landscape component. Soil conditions on this vegetation type display about 1,200 acres of satisfactory/unsatisfactory and about 4,300 acres as unsatisfactory, primarily due to a lack of nutrient cycling and the presence of compaction.

As with the western wheat-blue grama grasslands, surface fire will not carry within this vegetation zone until herbaceous component is increased over current levels. The fire regime in the western wheat-blue grama grasslands has been altered due to multiple, missed, fire intervals stemming from reduced herbaceous cover with fire condition classes a 2 to 3. There is the potential for increasing severity of fires due to woody fuel accumulation occurring within this vegetation zone.

This vegetation type is one of the primary habitat types for pronghorn antelope across the mesa, a management indicator species for early and late seral stages. Currently, grassland and meadow seral stage classifications are presently unknown in this type. Currently, road densities in this habitat type and in pronghorn antelope habitat are extremely high at 5.2 miles/square mile and provide disturbance potential to only pronghorn, but to a wide-variety of wildlife species as well. A seasonal closure for vehicular traffic is currently in place on a large portion of this vegetation type to minimize impact to pronghorn antelope fawning from May to the end of June.

Other wildlife species that are key to this type include, but are not limited to American peregrine falcon (Forest sensitive), Arynxa giant skipper (Forest sensitive), Black-footed ferret (federally listed as endangered), Burrowing owl (migratory bird species of concern), Early elfin (Forest sensitive), Elk (management indicator species for early seral stage of montane meadows), Ferruginous hawk (migratory bird species of concern), Freeman's agave borer (Forest sensitive), Navajo Mountain Mexican vole (Forest sensitive), Neumogen giant skipper (Forest sensitive), Pronghorn antelope (management indicator species for early and late seral stages), Swainson's hawk (migratory bird species of concern), and prairie dogs. A portion of this habitat type is contained in the Anderson Mesa Important Birding Area area that has been designated by theAudubon Society.

Thirty to forty outfitter and guide special use permits (SUA's) are permitted in the area each year, without controls on access routes, timing of use, etc., resulting in damage to resources, particularly at primary camping areas and to roads when they are wet. In addition, seasonal big game hunting is very popular in the area, and a significant number of tags are permitted each year in the area, without controls on access routes, the timing of hunts, repair of resource damage, etc. This often results in long-term, unacceptable damage to resources, particularly at primary camping areas and to area roads and soils when they are wet. Currently, all of the approximately 44 miles of existing roads are available for use for these activities.

Un-managed OHV (including, but not limited to, recreational use, antler gathering, and fuelwood gathering) use of the mesa has increased significantly in recent years and is causing wildlife disturbance, road and soil damage, reduced quality user experience, etc.. Impacts of large 4X4 vehicles can be great on muddy roads. Usually, ATV impacts are less than larger 4X4 vehicles. Exceptions to this are when ATV use is concentrated over the same trail, or on repetitive hill climbs. Currently, no motorized trails are identified at this time. Current regulations state that the roughly 5,500 acres of the montane meadows vegetation type is open for vehicular travel unless posted as closed.

Pinyon-Juniper/Blue Grama Woodland Existing Conditions

This vegetative zone is comprised of primarily mollisol soil types which indicate that the soils were formed under a grassland vegetative zone and occurs on nearly 6,700 acres across the landscape. Tree canopies are generally greater than 40%, dominated by young growth junipers, and only small openings occur within this vegetative type. Vegetative ground cover is also low across this landscape component. As with the Pinyon-juniper woodland type covered above, because of the high canopy cover there is very little, if any, species diversity and composition occurring in the understory and overall is thought to be lower than what the site is capable of sustaining. Soil conditions are primarily in satisfactory over this entire vegetation type, however, the high canopy covers are beginning to negatively affect soil condition.

The fire regime in most of this type has been altered with multiple, missed fire intervals occurring over the last 100 years with fire condition classes a 2 to 3. The lack of herbaceous understory prohibits fire spread throughout this type. Fire in younger growth pinyon-juniper is generally contained to single trees and will not spread due to the lack of surface fuels and large woody debris.

This vegetative zone currently contains canopy covers that exceed 50% over the entire area. This thick canopy cover is providing an impediment to animal movement from the grasslands on either side of Jaycox Mountain. The species of interest in this habitat type include the same species as the pinyon-juniper woodlands, as well the species in the grasslands. Current road densities in this type are 1.6 miles per square mile, with no current identified potential antelope habitat or mule deer habitat in this vegetation type.

Thirty to forty outfitter and guide special use permits (SUA's) are permitted in the area each year, without controls on access routes, timing of use, etc., resulting in damage to resources, particularly at primary camping areas and to roads when they are wet. In addition, seasonal big game hunting is very popular in the area, and a significant number of tags are permitted each year in the area, without controls on access routes, the timing of hunts, repair of resource damage, etc. This often results in long-term, unacceptable damage to resources, particularly at primary camping areas and to area roads and soils when they are wet. Currently, all of the approximately 17 miles of existing roads are available for use for these activities.

Un-managed OHV (including, but not limited to, recreational use, antler gathering, and fuelwood gathering) use of the mesa has increased significantly in recent years and is causing wildlife disturbance, road and soil damage, reduced quality user experience, etc.. Impacts of large 4X4 vehicles can be great on muddy roads. Usually, ATV impacts are less than larger 4X4 vehicles. Exceptions to this are when ATV use is concentrated over the same trail, or on repetitive hill climbs. Currently, no motorized trails are identified at this time. Current regulations state that the roughly 6,700 acres of the pj/blue grama woodland vegetation type is open for vehicular travel unless posted as closed.

Ponderosa Pine/Pinyon-juniper/Arizona Fescue/Blue Grama Existing Conditions

The Ponderosa Pine/Pinyon-juniper/ Arizona Fescue/Blue grama vegetative type occurs over approximately 36,000 acres of the Anderson Mesa landscape. This type is generally a transition zone between the lower elevation pinyon-juniper woodlands and the higher elevation ponderosa pine/Gambel oak vegetation zone. As such, the potential for species diversity is high in this zone.

There is a general lack of openings within this vegetation type, with usually only small interspaces occurring between overstory trees. Currently, as a general rule, there is poor composition and a low diversity of grasses and forbs across the Ponderosa Pine/Pinyon-juniper/ Arizona Fescue/Blue grama vegetative type when compared with the capability of each site. Canopy covers exceeding 50% occur on nearly half of this vegetative type and are affecting the production of browse species. Drought may also play a role in the composition and diversity of species currently displayed across this landscape component. Soil conditions on this vegetation type are all satisfactory.

The fire regime in most of this type has been altered with multiple, missed fire intervals occurring over the last 100 years with fire condition classes a 2 to 3. The lack of herbaceous understory prohibits fire spread throughout this type, with the exception of ponderosa pine stands within this vegetative type. The needlecast within ponderosa pine stands can promote surface fire spread. Mortality of large pinyon pine trees in this zone is increasing the potential for high intensity, stand replacing fire within this vegetative type.

One Northern goshawk post-fledgling activity site (PFA) is located within this vegetative zone. Recreational activities (roads and mechanized) are currently impacting deer habitat within this zone. Canopy covers greater 50% and missed fire regimes are negatively impacting the production of buckbrush, a prime browse species for mule deer. Road densities in this vegetation type are currently at about 2 miles per square mile, with only .2 miles per square mile of roads occur within identified potential pronghorn antelope habitat.

Other wildlife species that are key to this type include, but are not limited to Arynxa giant skipper (Forest sensitive), Black-throated gray warbler (migratory bird species of concern), Early elfin (Forest sensitive), Elk (management indicator species for early seral stage), Freeman's agave borer (Forest sensitive), Gray flycatcher (migratory bird species

of concern), Gray vireo (migratory bird species of concern), Juniper (plain) titmouse (management indicator species for P-J late seral stage and P-J snag component) Mule deer (management indicator species for early seral stage), Neumogen giant skipper (Forest sensitive), Northern goshawk (Forest sensitive), and the Pinyon jay (migratory bird species of concern).

Dispersed camping sites are too dense in some areas, and have associated resource problems such as vegetation damage, soil erosion, litter, sanitation, etc. Use is expanding to all parts of the area due to increase population demands. Problem areas exist within this vegetation type along Long Lake Road and portions of the 125 road to Kinnikinick Lake near Pine Hill, as well as the Marshall Lake Road that is directly adjacent to the analysis area. With the associated overuse, litter and sanitation problems are occurring. Little or no interpretation is available for user education.

Thirty to forty outfitter and guide special use permits (SUA's) are permitted in the area each year, without controls on access routes, timing of use, etc., resulting in damage to resources, particularly at primary camping areas and to roads when they are wet. In addition, seasonal big game hunting is very popular in the area, and a significant number of tags are permitted each year in the area, without controls on access routes, the timing of hunts, repair of resource damage, etc. This often results in long-term, unacceptable damage to resources, particularly at primary camping areas and to area roads and soils when they are wet. Currently, all of the approximately 114 miles of existing roads are available for use for these activities.

Un-managed OHV (including, but not limited to, recreational use, antler gathering, and fuelwood gathering) use of the mesa has increased significantly in recent years and is causing wildlife disturbance, road and soil damage, reduced quality user experience, etc.. Impacts of large 4X4 vehicles can be great on muddy roads. Usually, ATV impacts are less than larger 4X4 vehicles. Exceptions to this are when ATV use is concentrated over the same trail, or on repetitive hill climbs. Currently, no motorized trails are identified at this time. Current regulations state that the roughly 36,000 acres of the ponderosa pine/pinyon-juniper/Arizona fescue/blue grama vegetation type is open for vehicular travel unless posted as closed.

The Palatkwapi/Chavez trail traverses this vegetation zone. Currently, there is incomplete survey of Palatkwapi/Chavez Trail and a lack of interpretation of the Palatkwapi/Chavez Trail.

Ponderosa Pine/Gambel Oak/Mixed Conifer Existing Conditions

This vegetative zone occurs at the higher elevations of the AMLSA area and contains roughly 16,500 acres. There are a variety of soil types within this vegetative zone, with about 3,000 acres of predominately mollisol soil type occurring, suggesting these acres formed with very open canopies. A small portion of this vegetation zone contains a mixed conifer overstory (ponderosa pine, Douglas-fir, and white fir) in canyons the canyons of East Clear Creek and Jacks Canyon. Canopy covers over 50% of overstory trees exist on approximately 14,100 acres, primarily in young age classed ponderosa pine.

The high canopy cover has generally diminished understory species composition and diversity. Soil conditions on this vegetation type are all satisfactory.

The fire regime in most of this type has been altered with multiple, missed fire intervals occurring over the last 100 years with fire condition classes a 2 to 3. This has resulted in higher fuel loadings over historic levels. This combined with dense, younger growth tress has increased the potential for high intensity, stand replacing wildfires.

There are few large ponderosa pine trees and tree health is declining, therefore there is a lack of roost and perch sites for bald eagle and turkey. Large oaks, snags and large logs are rare across the landscape. Canopy covers exceeding 50% are diminishing browse species production of buckbrush, which is negatively impacting deer populations. Road densities of 2.7 miles/square mile currently exist in mule deer habitat in this vegetation type and provide disturbance during fawning and the breeding to deer. Road densities in identified potential pronghorn antelope habitat are currently at 1.3 miles per square mile. Overall road densities in this vegetation type are currently 2.4 miles per square mile and provide disturbance potential to a wide variety of species. Mexican spotted owl protected activity centers occur within this habitat type, as well as goshawk pfa's.

Other wildlife species that are key to this type include, but are not limited to Abert squirrel (management indicator species for early stages), Bald eagle (federally listed as threatened), Cordilleran flycatcher (migratory bird species of concern), Eared trogon (Forest sensitive), Elk (management indicator species for early seral stage), Hairy woodpecker (management indicator species for snag component), Mexican spotted owl (federally listed as threatened, in pine-oak habitat type), Navajo Mountain Mexican vole (Forest sensitive), Northern goshawk (Forest sensitive, management indicator species for late seral stage), Olive-sided flycatcher (migratory bird species of concern), Purple martin (migratory bird species of concern), Pygmy nuthatch (management indicator species for late seral stage), Wild turkey (management indicator species for late seral stage), and the Red squirrel (management indicator species of late seral stage of mixed conifer sites).

Dispersed camping sites are too dense in some areas, and have associated resource problems such as vegetation damage, soil erosion, litter, sanitation, etc. Use is expanding to all parts of the area due to increase population demands. Problem areas exist within this vegetation type along Long Lake Road (Forest Road 82) near Hay Lake and portions of the 82 road to Kinnikinick Lake near Pine Hill, and portions of the 125 road near FH-3. With the associated overuse, litter and sanitation problems are occurring. Little or no interpretation is available for user education.

Thirty to forty outfitter and guide special use permits (SUA's) are permitted in the area each year, without controls on access routes, timing of use, etc., resulting in damage to resources, particularly at primary camping areas and to roads when they are wet. In addition, seasonal big game hunting is very popular in the area, and a significant number of tags are permitted each year in the area, without controls on access routes, the timing of hunts, repair of resource damage, etc. This often results in long-term, unacceptable damage to resources, particularly at primary camping areas and to area roads and soils

when they are wet. Currently, all of the approximately 61 miles of existing roads are available for use for these activities.

Un-managed OHV (including, but not limited to, recreational use, antler gathering, and fuelwood gathering) use of the mesa has increased significantly in recent years and is causing wildlife disturbance, road and soil damage, reduced quality user experience, etc.. Impacts of large 4X4 vehicles can be great on muddy roads. Usually, ATV impacts are less than larger 4X4 vehicles. Exceptions to this are when ATV use is concentrated over the same trail, or on repetitive hill climbs. Currently, no motorized trails are identified at this time. Current regulations state that the roughly 17,000 acres of the ponderosa pine/Gambel oak/mixed conifer vegetation type is open for vehicular travel unless posted as closed.

Private land in-holdings exist within the analysis area, and may threaten future management options if they are developed; potentially adversely affecting wildlife, archaeology, soil and water, recreation and other resource values.

Non-stocked PJ Woodlands Existing Conditions

This vegetative zone occurs over approximately 32,500 acres of the AMLSA area. As a general rule, species composition and diversity are generally low across the montane meadows when compared to the capability of each site. Many of these sites were "pushed" in the 1950 and 1960's to create openings and improve forage opportunities. Warm season grasses generally dominate this vegetation type. Vegetative ground cover is also low across this landscape component. Non-stocked PJ Woodlands average about 5-6% shrub cover, with cliffrose, wolfberry, and four-winged saltbush the most prevalent shrub species on the non-stocked woodlands vegetation type. Soil conditions on this vegetation type are all satisfactory.

The fire regime in most of this type has been altered with multiple, missed fire intervals occurring over the last 100 years with fire condition classes a 2 to 3. The mechanical pushed treatments supplies a fuel load in large, down woody debris.

This vegetation type has high potential to produce browse species, and is an important vegetation type for mule deer. Current road densities are roughly 2.1 miles/square mile of roads for the whole type, as well as for potential mule deer habitat within the vegetation type. There is a potential for disturbance to mule deer during fawning and breeding season from the current road system. Other species of wildlife that are key to this vegetation type are the same as for the PJ woodland vegetation type.

The access road into the Jacks Canyon Climbing Area is a Level 2 road in poor condition, causing resource damage e.g. rutting and braiding of the roadway, and provides an unsatisfactory user experience. The developed site facilities at the trailhead and camping area are primitive, including inadequate parking delineation and are without surfacing material, without established rock fire rings, without tables or grills, one single seat portable toilet exists, and there currently is no on-site kiosk or information source.

Thirty to forty outfitter and guide special use permits (SUA's) are permitted in the area each year, without controls on access routes, timing of use, etc., resulting in damage to resources, particularly at primary camping areas and to roads when they are wet. In addition, seasonal big game hunting is very popular in the area, and a significant number of tags are permitted each year in the area, without controls on access routes, the timing of hunts, repair of resource damage, etc. This often results in long-term, unacceptable damage to resources, particularly at primary camping areas and to area roads and soils when they are wet. Currently, all of the approximately 105 miles of existing roads are available for use for these activities.

Un-managed OHV (including, but not limited to, recreational use, antler gathering, and fuelwood gathering) use of the mesa has increased significantly in recent years and is causing wildlife disturbance, road and soil damage, reduced quality user experience, etc.. Impacts of large 4X4 vehicles can be great on muddy roads. Usually, ATV impacts are less than larger 4X4 vehicles. Exceptions to this are when ATV use is concentrated over the same trail, or on repetitive hill climbs. Currently, no motorized trails are identified at this time. Current regulations state that the roughly 32,000 acres of the non-stocked pinyon-juniper woodland vegetation type is open for vehicular travel unless posted as closed.

Private land in-holdings exist within the analysis area, and may threaten future management options if they are developed; potentially adversely affecting wildlife, archaeology, soil and water, recreation and other resource values.

Wet Meadows Existing Conditions

This vegetative zone occurs on nearly 2,000 acres of the AMLSA area. These acres are associated with seasonal and semi-permanent wetland sites within the analysis area. An additional 1,700 acres of the LSA area is classified as water, which associates with the reservoirs of the area. For the purposes of this report, seasonal, semi-permanent, reservoir, springs, and riparian streamcourses will be discussed under this vegetative section. The wetlands are highly variable in plant production from year-to-year, based on the climatic regime and the period of inundation. Therefore, there is great natural variability of wetland plant production potential with each wetland class. Soil conditions on these acres are all satisfactory. The fire regime in the wet meadows is unknown.

Dominant plants in seasonal wetlands are spikerush species *Eleocharis acicularis* needle spikerush, *Eleocharis palustris* creeping spikerush. Average plant heights are 10-15" for needle spikerush and to 24" for creeping spikerush. Spikerush provides habitat for many waterfowl. Plants are dormant or non-existent during dry cycles or when no inundation occurs within a seasonal wetland, Use by waterfowl during inundation is for pair water, nesting, brood rearing and molting, usually during spring and summer. Inundation varies for each seasonal wetland. The following seasonal wetlands have a low potential for inundation: Antelope North, Antelope Tank, Boot Lake, Breezy, Corral Tank, Indian Lake, West Breezy, and Yeager Lake. The following seasonal wetlands have a low to moderate potential for inundation: Corner Lake and Potato Lake. The following seasonal wetlands have a medium potential for inundation: Al's Lake, Camillo Lake, Cow Lake,

Grass Lake, Indian Tank, Pickett Lake, Pine Lake, and Youngs Lake. The following seasonal wetlands have a medium to high potential for inundation: Long Lake, Melatone Lake and Tony's Tank.

Dominant plants in semi-permanent wetlands are hardstem bulrush (*Schoenoplectus acutus* var. *acutus*) formerly, *Scirpus acutus.* Plants grow 3 to 9 feet high in wet years and are dormant in dry cycles. Mats of previous year's carcasses often stay on site. Hardstem bulrush provides nesting habitat for overwatering birds and some food for waterfowl. Use by waterfowl is year round, with waterfowl using these wetlands for molting, pair water, courtship, nesting, brood habitat, wing molt, molt and staging. Stock ponds within these wetland types do provide water for wildlife, but no stock tanks have been identified specifically for wildlife habitat needs. Inundation potential of semi-permanent wetlands is high for all wetlands, with the exception of Post Lake and Little Dry Lake, which have medium potential for inundation.

Road densities in this vegetation type are currently 3.2 miles per square mile, and provide potential disturbance to a variety of wildlife species, including pronghorn antelope and all waterfowl. The wet meadow vegetation type is a key component to the Anderson Mesa Important Birding Area area that has been designated by the Audubon Society.

Other wildlife species that are key to this type include, but are not limited to American bittern (migratory bird species of concern), American peregrine falcon (Forest sensitive), Bald eagle (federally listed as threatened), Blue-black silverspot butterfly (Forest sensitive), Chiricahua leopard frog (federally listed as threatened), Cinnamon teal (management indicator species), Maricopa tiger beetle (Forest sensitive), Mountain silverspot butterfly (Forest sensitive), Northern leopard frog (Forest sensitive), Southwestern (Arizona) toad (Forest sensitive), and the Spotted skipperling (Forest sensitive).

Lotic (running water) stream systems are limited in extent (Lower Clear Creek is free-flowing, Jacks Canyon and Sawmill Draw are intermittent perennial streams) within the LSA boundary. Riparian streams within the analysis area are tied directly to ground water resources and are not as dependent on flow from short-term droughts, however, long-term droughts deplete recharge and reduces the amount of stream discharge. Lower Clear Creek contains populations of the following native species: Little Colorado spinedace, speckled dace, bluehead sucker, Little Colorado River sucker, and roundtail chub. Habitat conditions within the analysis area are satisfactory for native fish. The trail to the Jacks Canyon Climbing area occurs within portions of the vegetation type. One major access trail exists, with 2-3 user created trails developing. Access points limit physical access to these riparian areas. Additional climbing areas are being used and are established within (or on the boundary of) the LSA boundary (the Pit, and the east end of Anderson Mesa).

Anecdotal evidence suggests drying up of springs. The evidence on springs is not clear if it is climate related or management related, or both. Some drying of springs and streams may be tied to long-term drought and the lack of recharge from this climatic condition. Increase canopy in overstory species may also be affecting spring flow through

interception of snow in canopies and through evapotranspiration during the growing season.

Current Riparian Proper Functioning Condition (PFC) classes are: 14.8 miles of streams in proper functioning condition, 0 miles of streams in functional at-risk, 0 miles of streams are nonfunctional. Currently, 1 mile of stream and 14 springs have not been assessed for functionality, but anecdotal reports are that the springs are impacted by grazing ungulates.

Fish are currently stocked in Kinnikinick, Morton, Coconino, Long, and, Ashurst Lakes. Fish habitat structures are being placed in Long Lake in 2004. The need for habitat structures at Ashurst and Kinnikinick Lakes is not known. Sport fishing, long popular at lakes on the mesa, has declined in recent years due to the introduction of undesirable species of fish and crayfish, drought, and lack of management.

Lentic (standing water) seasonal and semi-permanent wetlands are almost exclusively dependent upon rain and snow for water (there is not connection to ground water on these sites on Anderson Mesa). Climate is the main force that guides inundation of these wetland types because the wetlands rely entirely on precipitation for water. During dry years, inundation may be limited to only a portion of the wetland to no inundation at all on some seasonal wetlands. The annual duration of inundation for these wetlands is also reduced during droughts years. During wet cycles, seasonal wetlands may experience 3-6 months of inundation and semi-permanent wetlands may experience 6-12 months of inundation. During droughts, these timeframes and the extent of duration are reduced. Reservoir wetlands, as well as a handful of seasonal wetlands, that have water augmentation through an extensive ditch system to maintain water levels and are not as subject to drought for water inundation as those wetlands that do not have water augmentation. On reservoir wetlands, very little regeneration is occurring in woody species, and what is occurring is heavily grazed by ungulates.

Overall, the riparian extent of wetlands appears stable from reviewing old aerial photos. Stock ponds occur in nearly all seasonal and semi-permanent wetlands and are having an affect on wetlands from attaining their full potential, but do not necessarily keep the site from attaining proper functioning condition. Water rights are currently in adjudication within the analysis area and current water rights are for stock and wildlife watering. Dispersed camping is expected to increase and could negatively affect wetland sites, especially along the Ashurst Lake Road.

The current wetland Proper Functioning Condition (PFC) classes of seasonal, semi-permanent and reservoir wetlands are: 30 wetlands/reservoirs in PFC, 14 wetlands/reservoirs are functional at-risk and 0 sites as nonfunctional. The PFC ratings are based on expected changes to grazing regimes proposed within current NEPA analyses. If these changes are not implemented, then a wetland that is currently at PFC could drop to functional at-risk if the site is grazed to the extent that suitable biomass is not left on-site to maintain nutrient cycling within the wetlands. Morton Lake and Grass Lake contain invasive plants that threaten their long-term functionality.

Portions of two Inventoried Roadless Areas (IRA's) exist in the analysis area Upper Jacks Canyon, and Lower Jacks Canyon. Management oversight to limit the establishment of new tracks and roads into the area is sporadic. No new roads have been established in the portions of the IRA in this vegetation zone.

Developed sites adjacent to reservoir wetland types in this vegetation zone are currently in poor to fair condition (Ashurst, Kinnikinick, and Forked Pine) and the boat launches at Ashurst Lake (2), Long Lake, and Kinnikinick Lake; most of these facilities are in states of disrepair, with inadequate signing in poor condition, inadequate interpretation, and unsatisfactory user experiences as a result. New boat ramps that are currently being constructed at Long Lake are exceptions to this existing condition. Ashurst and Forked Pine Campgrounds at Ashurst Lake are currently developed for overnight camping there are frequent conflicts between day and overnight use due to limited resource availability. Drought, vandalism, and bug infestation have caused severe vegetation loss in some developed recreation sites, and no vegetation management plan exists for these sites to assure they are maintained as quality recreation sites in the future.

Thirty to forty outfitter and guide special use permits (SUA's) are permitted in the area each year, without controls on access routes, timing of use, etc., resulting in damage to resources, particularly at primary camping areas and to roads when they are wet. In addition, seasonal big game hunting is very popular in the area, and a significant number of tags are permitted each year in the area, without controls on access routes, the timing of hunts, repair of resource damage, etc. This often results in long-term, unacceptable damage to resources, particularly at primary camping areas and to area roads and soils when they are wet. Currently, all of the approximately 2 miles of existing roads are available for use for these activities.

Un-managed OHV (including, but not limited to, recreational use, antler gathering, and fuelwood gathering) use of the mesa has increased significantly in recent years and is causing wildlife disturbance, road and soil damage, reduced quality user experience, etc.. Impacts of large 4X4 vehicles can be great on muddy roads. Usually, ATV impacts are less than larger 4X4 vehicles. Exceptions to this are when ATV use is concentrated over the same trail, or on repetitive hill climbs. Currently, no motorized trails are identified at this time. Current regulations state that the roughly 2,000 acres of the wet meadows vegetation type is open for vehicular travel unless posted as closed. Cultural resource survey is incomplete around wet meadows.

Hay Lake Existing Conditions

The existing condition for the Hay Lake Complex was a collaborative effort between the Coconino National Forest, Other Agencies, Northern Arizona University, the Citizens Working Group and input from a public meeting in April 2003.

The Hay Lake complex is a unique area of approximately 9,500 acres where 5 different Lakes are situated in close proximity to each other—Hay Lake (currently under a 30-year wetland easement with the National Resource Conservation Service), Long Lake, Tremaine Lake, Soldier Lake, and Soldier Lake Annex (see Figure 3). Long Lake

currently is stocked with fish by the Arizona Game and Fish Department. There are approximately 6,000 acres of newly acquired lands that were in private holdings and now are under ownership of the US Forest Service. There is currently no specific management direction for the newly acquired Hay Lake property within the Coconino National Forest Land Management Plan.

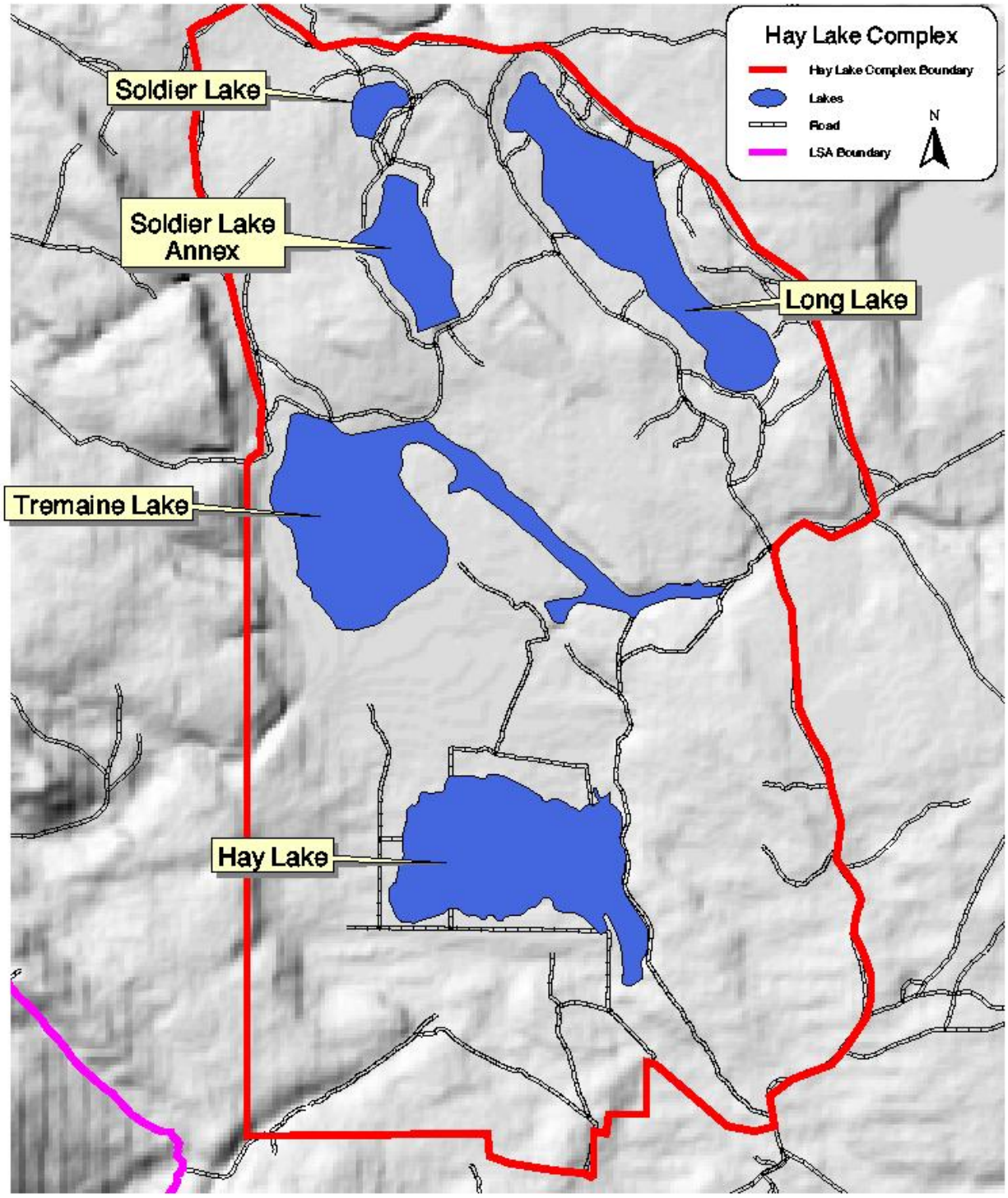
The National Resource Conservation Service (NRCS) has just completed a restoration of the Hay Lake lakebed within the 30 year wetland easement. The Hay Lake wetland easement is currently accessed by a number of 2-track roads that are used by NRCS and the private land-owner to do maintenance work on the ditches and monitoring of water measuring devices. There is currently no road management in the Hay Lake Complex. There are no specific areas that are designated for wildlife viewing at Hay Lake, nor is there any interpretation of the wetland. Currently, the various water delivery systems (ditches) are being maintained at satisfactory levels of operation. Fish are currently stocked in Long Lake. Fish habitat structures are being placed in Long Lake in 2004. Sport fishing, long popular at lakes on the mesa, has declined in recent years due to the introduction of undesirable species of fish and crayfish, drought, and lack of management.

New boat ramps that are currently being constructed at Long Lake. Drought, vandalism, and bug infestation have caused severe vegetation loss adjacent to Long Lake developed recreation site, and no vegetation management plan exists for these sites to assure they are maintained as quality recreation sites in the future.
Dispersed camping sites occur around Long Lake, and have associated resource problems such as vegetation damage from numerous roads, soil erosion, litter, sanitation, etc. Little or no interpretation is available for user education. Dispersed camping is expected to increase and could negatively affect wetland sites.

Access is by foot travel to Tremaine Lake for those wanting to fish and recreate on the lake. Tremaine Lake provides nesting habitat for waterfowl. There is one known bald eagle winter roost west of Tremaine Lake. Water quality at Tremaine Lake has not been determined—mercury may be an issue.

Crayfish are present in the Hay Lake Complex that are reducing emergent and submergent vegetation populations and negatively affecting water quality.

Figure 3: Hay Lake Complex



Desired Future Conditions for the Anderson Mesa Landscape Assessment Area

Desired conditions are statements that express how we want the Anderson Mesa Landscape Scale Assessment (AMLSA) area to look and function now and in the future. To understand the desired condition of the AMLSA, we must understand what a desired condition is.

A desired condition is defined as: "Land or resource conditions that are expected to result if goals and objectives are fully achieved." (USDA, 2003). Desired future conditions are both ecological in context, as well as societal in context (USDA, 1999). As a future-visioning choice, a desired future condition seeks to protect a broad range of choices for future generations, avoid irretrievable losses, and guide current management and conservation strategies and actions. However, given the dynamic nature of ecological and social systems, a desired future condition is also dynamic and thus is always revisited during monitoring, external review, and evaluation of performance. (USDA, 1999).

The vegetation groups that were used in the existing conditions are also the basis for the desired condition summary for all resource areas. Many of the recreational and cultural resource items exist across the entire Anderson Mesa Landscape Analysis Area and cannot be easily split into individual vegetation types. Where possible, recreation desired future conditions were assigned to a particular vegetation zone. Those recreation items that could not be split easily are discussed at existing conditions common to all vegetation types. The Hay Lake area is also discussed separately from specific vegetative zones. There is not a specific timeframe for the desired future conditions to be attained, unless specified.

Desired Future Conditions Common to All Vegetation Zones

The following are recreation-related desired conditions that apply across the entire landscape. The ROS inventory for Anderson Mesa has been updated, reflecting today's conditions, values, and uses and road densities and standards match ROS class objectives. In addition, the Scenery Management System (SMS) inventory for Anderson Mesa has been updated, reflecting today's conditions, values, and uses.

Newer recreational uses are accommodated on Anderson Mesa when they are in balance with resource capacity and capability. Recreational uses that are not in balance with resource management goals are managed intensely or discouraged.

An effective interpretation and environmental education program exists on the mesa that helps attain public understanding and cooperation with agency management goals, and increases user safety and satisfaction. An interpretive management plan has been prepared for the mesa, including identification and focus on main interpretive themes for Anderson Mesa. Interpretive improvements, materials and facilities are in place to help achieve agency management goals. Included in the overall program are both broad and specific emphasis topics and areas, including pre-historic and historic archaeology,

wildlife and habitat protection, current uses of the mesa, soil and water protection, noxious weed management, the value of natural open spaces, grasslands, wetlands, the sustainability of resource values in balance with local economics and concepts of multiple use management, recreation opportunities, etc.

The number of cultural resource that are interpreted and in place that helps attain public understanding and cooperation with agency management goals for archaeological resources. At least one of the sites interpreted is interpreted from a Native American perspective. The condition of fire sensitive sites has been updated and documented. There are complete ethnographic studies of the role of the Yavapai, Apache, Hopi, Navajo Nations roles on Anderson Mesa. To achieve these desired conditions, adequate funding is necessary to manage cultural resources.

Invasive weed species do not dominate the plant communities or landscape on Anderson Mesa and they do not affect the desired composition, structure or function of the any of communities on the Mesa. Native ecosystems are resilient and resistant to noxious weed invasions and existing or future noxious weed infestations are treatable with the accepted practices as identified in the 3 Forest Weed FEIS.

Pinyon-Juniper Woodland Desired Future Conditions

For all PJ woodland types, species diversity of understory native plants and composition is improved over current condition. Perennial plant composition, tree and shrub canopy cover is moving toward the potential of the site based on a climatic regime with sustained years of normal precipitation. There is a mixed mosaic of seral stages (including variable tree canopy covers) across the landscape.

Vegetative ground cover (VGC) is adequate to enhance nutrient cycling and to protect the soil from accelerated erosion. VGC moderates stormwater runoff and promotes ground water infiltration and recharge of the local, perched aquifers that feed ephemeral seeps and springs within Cherry Canyon and Walnut Canyon. Browse species viability and reproduction is increased along the Anderson Mesa rim and maintained in non-stocked woodlands.

Satisfactory soils are maintained on approximately 28,500 acres within this vegetation types. Soil conditions are moving towards satisfactory on approximately 67,500 acres and are functioning within their inherent capability and long-term soil productivity is maintained or improved. Soils on approximately 14,000 that inherently unstable will remain so. Some impaired or unsatisfactory soils will not improve in the short-term and may require decades to improve. Unsatisfactory soils are moving towards impaired and then to satisfactory. The process to move them towards satisfactory is slower than for impaired soils so primary attention is generally given towards improving impaired soils.

Include fire, prescribed or natural, as a part of the proper functioning condition of the pinyon-juniper woodland in which grasses substantially contribute to the natural fire

regime. Improve fire regime condition class to 1 to 2, especially near Walnut Canyon National Monument.

The PJ woodland type is managed to increase deer populations across the vegetative type. Wildlife can easily move within their home ranges in order to obtain food and water, and access refugia and breeding areas. Grasslands have interconnections between them that allow unconstrained movement between areas by wildlife (corridors). Landscape scale habitat connectivity from Walnut Canyon N.M. to the south and east along AM is maintained. Connectivity to habitats occurs in the north and east of this vegetative type into/from winter range. Recreational activities do not impact wildlife in key areas during critical time periods (breeding, fawning, and bird nesting).

A comprehensive management plan at the Jacks Canyon Climbing Area is completed to address multiple resource impacts through the LSA process for climbing areas. The vision is for designated primitive camps at Jacks Canyon sites (20-100 campsites) over the next 20-year period. A parking area has been constructed, at least one two-set toilet has been installed, the access road improved, damaged areas, including un-needed campsites and roads, have been rehabilitated, and interpretive and directional information is provided. Forest Service maintains a strong presence on the ground, including for public contact, law enforcement, and area management.

The Padre Canyon, Upper Jacks Canyon and Lower Jacks Canyon Inventoried Roadless Areas (IRA's) are managed for their roadless character, in compliance with law and regulation.

All developed recreation sites are maintained in good condition, with up to date facilities, signing, interpretation, and other features, and meeting all related health and safety guidelines and requirements with implementation schedule for completion outlined in the Forest Recreation Capital Investment Program. Elk's Campground is designated as a large group event site. The four trailheads along the Arizona Trail are managed to standard to provide for resource protection and interpretation needs. A vegetation management plan(s) has been prepared that provides guidance for long-term maintenance of developed sites.

In highest dispersed camping use areas, designated dispersed campsites have been identified and delineated, and are managed for resource protection and user satisfaction. Other areas with high resource values (i.e., wetlands) have been identified, and designated dispersed sites have been designated and marked to avoid impacts to high resource values. Areas where significant problems exist have been identified, analyzed and addressed, with necessary management changes made to balance use with resource objectives. Interpretation facilities and materials exist to protect user experience and resource condition. Dispersed camping is regulated on Ashurst Road. Backcountry dispersed camping sites are managed for that experience, and are not allowed to become high use sites in order to protect the experience goal.

Through analysis, desirable types and levels of outfitter guide activities have been identified, and a prospectus for permit issuance has been advertised. Outfitter guide uses are in balance with overall recreation and other resource needs. Special Use Permits have site-specific Plans of Operations. Big game hunting is managed in such a way that resources are protected as well as hunting opportunity and experience exists. Repair of road damage is targeted at 100% of the miles of road damaged by hunters repaired in twelve months of the damage.

Off Highway Vehicle (OHV) use is managed to protect resources and user experience, including for the various types of OHV use, e.g. 4x4, ATV, single track. Long distance and local motorized trail opportunities have been created, including loop trails from communities.

The Arizona Trail is completed and managed to match its national significance, including for interpretation purposes. Survey of the Palatkwapi/Chavez Trail is complete and there is a complete assessment of Palatkwapi/Chavez Trail and a completed Management Plan that features interpretation opportunities for this trail.

Lands desirable for acquisition have been identified and acquired by the Forest Service for resource protection purposes.

Western Wheat-Blue Grama Grasslands Desired Future Conditions

For the western wheat/blue grama grassland vegetation type, species diversity and composition is improved over current condition. Perennial plant composition is good, and is moving toward the potential of the site. Manage for a grassland type under a natural range of variability. There is seed production and species diversity to produce hiding cover for pronghorn and birds. Vegetative ground cover (VGC) is adequate to enhance nutrient cycling and to protect the soil from accelerated erosion.

Satisfactory soils are maintained on approximately 34,700 acres within this vegetation types. Soil conditions are moving towards satisfactory on approximately 20,400 acres and are functioning within their inherent capability and long-term soil productivity is maintained or improved. Unsatisfactory soils are moving towards impaired and then to satisfactory. The process to move them towards satisfactory is slower than for impaired soils so primary attention is generally given towards improving impaired soils.

Include fire, prescribed or natural, as a part of the proper functioning condition of western wheat/blue grama grassland vegetation type in which grasses substantially contribute to the natural fire regime. Improve fire regime condition class to 1 to 2.

The western wheat/blue grama grassland vegetation type has the range of seral stages (early, mid, late) well represented and distributed providing high quality habitat for pronghorn. Grasslands and meadows have the range of seral stages (early, mid, late) well represented and distributed providing high quality habitat for pronghorn. The western wheat/blue grama grassland vegetation type is managed for pronghorn antelope. Manage elk at levels that do not negate benefits to pronghorn. A high forb component exists

within this vegetation type. Openings are maintained throughout this vegetative type, with less than 5% tree canopy cover occurring. Recreational activities do not impact wildlife in key areas during critical time periods (breeding, fawning, and bird nesting).

Depending upon annual precipitation, ephemeral and temporary wetlands provide habitats that are consistent with their individual site potential. Ephemeral and temporary wetlands are trending towards, are maintaining or are in proper functioning condition by the year 2030. Select stock tanks are maintained for wildlife habitat and adequate water for wildlife and domestic livestock watering when site-specific NEPA is completed that identifies the need for the stock tanks and are an also exception to this vision. Proper functioning condition is defined as follows: Wetland vegetation has a diverse age-class distribution, a diverse composition, and includes species that indicate maintenance of riparian soil moisture characteristics. Wetland vegetation is comprised of plant communities that have root masses that dissipate energy during high flows and has adequate cover to protect shores. Wetland plants exhibit high vigor, resist compaction, and provide material for nutrient cycling.

Through analysis, desirable types and levels of outfitter guide activities have been identified, and a prospectus for permit issuance has been advertised. Outfitter guide uses are in balance with overall recreation and other resource needs. Special Use Permits have site-specific Plans of Operations. Big game hunting is managed in such a way that resources are protected as well as hunting opportunity and experience exists. Repair of road damage is targeted at 100% of the miles of road damaged by hunters repaired in twelve months of the damage.

Off Highway Vehicle (OHV) use is managed to protect resources and user experience, including for the various types of OHV use, e.g. 4x4, ATV, single track. Long distance and local motorized trail opportunities have been created, including loop trails from communities.

Survey of the Palatkwapi/Chavez Trail is complete and there is a complete assessment of Palatkwapi/Chavez Trail and a completed Management Plan that features interpretation opportunities for this trail.

Lands desirable for acquisition have been identified and acquired by the Forest Service for resource protection purposes.

Montane Meadows Desired Future Conditions

Grasslands on the montane meadow vegetation type have improved composition and diversity over current conditions with little to no tree canopy cover. Vegetative ground cover (VGC) is adequate to enhance nutrient cycling and to protect the soil from accelerated erosion.

Satisfactory soils are maintained on approximately 1,200 acres within this vegetation types. Soil conditions are moving towards satisfactory on approximately 4,300 acres and are functioning within their inherent capability and long-term soil productivity is

maintained or improved. Unsatisfactory soils are moving towards impaired and then to satisfactory. The process to move them towards satisfactory is slower than for impaired soils so primary attention is generally given towards improving impaired soils.

Include fire, prescribed or natural, as a part of the proper functioning condition of montane meadow vegetation type in which grasses substantially contribute to the natural fire regime. Improve fire regime condition class to 1 to 2.

The montane meadow vegetation type has the range of seral stages (early, mid, late) well represented and distributed providing high quality habitat for pronghorn. The montane meadows are managed for pronghorn. Manage elk at levels that do not negate benefits to pronghorn. A high forb component exists within this vegetation type. Openings are maintained throughout this vegetative type, with less than 5% tree canopy cover occurring. Recreational activities do not impact wildlife in key areas during critical time periods (breeding, fawning, and bird nesting).

Through analysis, desirable types and levels of outfitter guide activities have been identified, and a prospectus for permit issuance has been advertised. Outfitter guide uses are in balance with overall recreation and other resource needs. Special Use Permits have site-specific Plans of Operations. Big game hunting is managed in such a way that resources are protected as well as hunting opportunity and experience exists. Repair of road damage is targeted at 100% of the miles of road damaged by hunters repaired in twelve months of the damage.

Off Highway Vehicle (OHV) use is managed to protect resources and user experience, including for the various types of OHV use, e.g. 4x4, ATV, single track. Long distance and local motorized trail opportunities have been created, including loop trails from communities.

Pinyon-Juniper/Blue Grama Woodland Desired Future Conditions

The Pinyon-Juniper/Blue Grama Woodland vegetation type have openings that are greater than about 1 acre with improved understory composition and diversity over current conditions. Tree canopy cover is less than the predicted value for the late seral stage in the potential plant community and the site has a mixed mosaic of seral stages (including variable tree canopy covers) across the landscape. Grassland transitional areas on Pinyon-Juniper/Blue Grama Woodlands, located adjacent to grasslands and where tree canopy covers are less than about 10% are maintained as Grasslands. There is an increase the proportion of area in openings across this vegetation type.

Satisfactory soils are maintained on approximately 6,700 acres within this vegetation types. Include fire, prescribed or natural, as a part of the proper functioning condition of The Pinyon-Juniper/Blue Grama Woodland vegetation type in which grasses substantially contribute to the natural fire regime. There are places where fire cannot burn or never has burned as a surface fire due to lack of herbaceous surface fuel. Improve fire regime condition class to 1 to 2.

Wildlife can easily move within their home ranges in order to obtain food and water, and access refugia and breeding areas. Grasslands have interconnections between them that allow unconstrained movement between areas by wildlife (corridors) the Jaycox Mountain area. Recreational activities do not impact wildlife in key areas during critical time periods (breeding, fawning, and bird nesting).

Through analysis, desirable types and levels of outfitter guide activities have been identified, and a prospectus for permit issuance has been advertised. Outfitter guide uses are in balance with overall recreation and other resource needs. Special Use Permits have site-specific Plans of Operations. Big game hunting is managed in such a way that resources are protected as well as hunting opportunity and experience exists. Repair of road damage is targeted at 100% of the miles of road damaged by hunters repaired in twelve months of the damage.

Off Highway Vehicle (OHV) use is managed to protect resources and user experience, including for the various types of OHV use, e.g. 4x4, ATV, single track. Long distance and local motorized trail opportunities have been created, including loop trails from communities.

Ponderosa Pine/Pinyon-juniper/Arizona Fescue/Blue Grama Desired Future Conditions

The Ponderosa Pine/PJ/AZ /Fescue/Blue Grama vegetation type have large interspaces with improved understory composition and diversity over current conditions. Tree canopy cover is less than the predicted value for the late seral stage in the potential plant community.

Satisfactory soils are maintained on approximately 36,000 acres within this vegetation types. Include fire, prescribed or natural, as a part of the proper functioning condition of Ponderosa Pine/PJ/AZ /Fescue/Blue Grama vegetation type in which grasses substantially contribute to the natural fire regime. Improve fire regime condition class to 1 to 2. Recreational activities do not impact wildlife in key areas during critical time periods (breeding, fawning, and bird nesting), especially for deer.

In highest dispersed camping use areas within this vegetation type along Long Lake Road (Forest Road 82) and portions of the 125 road to Kinnikinick Lake near Pine Hill, as well as the Marshall Lake Road that is directly adjacent to the analysis area. , designated dispersed campsites have been identified and delineated, and are managed for resource protection and user satisfaction. Other areas with high resource values (i.e., wetlands) have been identified, and designated dispersed sites have been designated and marked to avoid impacts to high resource values. Areas where significant problems exist have been identified, analyzed and addressed, with necessary management changes made to balance use with resource objectives. Interpretation facilities and materials exist to protect user experience and resource condition. Dispersed camping is regulated on Ashurst Road.

Through analysis, desirable types and levels of outfitter guide activities have been identified, and a prospectus for permit issuance has been advertised. Outfitter guide uses

are in balance with overall recreation and other resource needs. Special Use Permits have site-specific Plans of Operations. Big game hunting is managed in such a way that resources are protected as well as hunting opportunity and experience exists. Repair of road damage is targeted at 100% of the miles of road damaged by hunters repaired in twelve months of the damage.

Off Highway Vehicle (OHV) use is managed to protect resources and user experience, including for the various types of OHV use, e.g. 4x4, ATV, single track. Long distance and local motorized trail opportunities have been created, including loop trails from communities.

Survey of the Palatkwapi/Chavez Trail is complete and there is a complete assessment of Palatkwapi/Chavez Trail and a completed Management Plan that features interpretation opportunities for this trail.

Ponderosa Pine/Gambel Oak/Mixed Conifer Desired Future Conditions

The Ponderosa pine/Gambel oak/mixed conifer type has moderately large and patchy herbaceous interspaces and a lower tree canopy cover than the potential plant community for Mollisol units (TES map units 582 and 584). The remaining map units will be managed toward the higher end of the predicted plant community overstory canopy cover range.

The health and numbers of large ponderosa pine trees are adequate to provide roosting and perching sites for bald eagle and turkey. Maintain oak, large log and snag component within this type.

Satisfactory soils are maintained on approximately 16,500 acres within this vegetation types. Include fire, prescribed or natural, as a part of the proper functioning condition of the Ponderosa pine/Gambel oak/mixed conifer type in which grasses substantially contribute to the natural fire regime. Improve fire regime condition class to 1 to 2.

The ponderosa pine/Gambel oak/mixed conifer type is managed for a variety of wildlife species across the vegetative type. Recreational activities do not impact wildlife in key areas during critical time periods (breeding, fawning, and bird nesting).

In the highest use dispersed camping areas in this vegetation type that occur along Long Lake Road (Forest Road 82) near Hay Lake and portions of the 82 road to Kinnikinick Lake near Pine Hill and portions of the 125 road near FH-3, designated dispersed campsites have been identified and delineated, and are managed for resource protection and user satisfaction. Other areas with high resource values (i.e., wetlands) have been identified, and designated dispersed sites have been designated and marked to avoid impacts to high resource values. Areas where significant problems exist have been identified, analyzed and addressed, with necessary management changes made to balance use with resource objectives. Interpretation facilities and materials exist to protect user experience and resource condition. Dispersed camping is regulated on Ashurst Road.

Through analysis, desirable types and levels of outfitter guide activities have been identified, and a prospectus for permit issuance has been advertised. Outfitter guide uses are in balance with overall recreation and other resource needs. Special Use Permits have site-specific Plans of Operations. Big game hunting is managed in such a way that resources are protected as well as hunting opportunity and experience exists. Repair of road damage is targeted at 100% of the miles of road damaged by hunters repaired in twelve months of the damage.

Off Highway Vehicle (OHV) use is managed to protect resources and user experience, including for the various types of OHV use, e.g. 4x4, ATV, single track. Long distance and local motorized trail opportunities have been created, including loop trails from communities.

Lands desirable for acquisition have been identified and acquired by the Forest Service for resource protection purposes.

Non-stocked PJ Woodlands Desired Future Conditions

Within the non-stocked PJ woodland type, improve cool season graminoid diversity and composition over current conditions. Manage pushed non-stocked PJ Woodlands as a mosaic of non-stocked and stocked PJ Woodlands because they have generally low grassland potential but have variable potential for browse production. Edge effect is enhanced within this vegetation type. Browse species viability and reproduction is increased along the Anderson Mesa rim and maintained in non-stocked woodlands.

Satisfactory soils are maintained on approximately 32,200 acres within this vegetation types. Include fire, prescribed or natural, as a part of the proper functioning condition of non-stocked PJ woodland in which grasses substantially contribute to the natural fire regime. Improve fire regime condition class to 1 to 2. Recreational activities do not impact wildlife in key areas during critical time periods (breeding, fawning, and bird nesting).

Through analysis, desirable types and levels of outfitter guide activities have been identified, and a prospectus for permit issuance has been advertised. Outfitter guide uses are in balance with overall recreation and other resource needs. Special Use Permits have site-specific Plans of Operations. Big game hunting is managed in such a way that resources are protected as well as hunting opportunity and experience exists. Repair of road damage is targeted at 100% of the miles of road damaged by hunters repaired in twelve months of the damage.

Off Highway Vehicle (OHV) use is managed to protect resources and user experience, including for the various types of OHV use, e.g. 4x4, ATV, single track. Long distance and local motorized trail opportunities have been created, including loop trails from communities.

Lands desirable for acquisition have been identified and acquired by the Forest Service for resource protection purposes.

Wet Meadows Desired Future Conditions

Satisfactory soils are maintained on approximately 2,000 acres within this vegetation type. Depending upon annual precipitation, seasonal and semi-permanent wetlands provide habitats that are consistent with their individual site potential and consist of mosaics with a variety of vegetation and structural conditions that provide for a sustainable and diverse community of aquatic and terrestrial fauna; including game and non-game species, native species, common and rare species.

Seasonal and semi-permanent wetlands are protected for a variety of species (not only limited to critical waterfowl breeding periods and the July 15 cutoff). Upland vegetation at least 100 meters from seasonal and semi-permanent wetlands and other woody debris provide adequate height and cover for nesting waterfowl. Recreational activities do not impact wildlife in key areas during critical time periods (breeding, fawning, and bird nesting).

Seasonal and semi-permanent wetlands provide habitats that are consistent with their potential and the climatic regime. Seasonal, semi-permanent, and reservoir wetland areas are in, are trending towards, or are maintaining proper functioning condition by the year 2030. Reservoirs are exceptions to this vision. Select stock tanks are maintained for wildlife habitat and adequate water for wildlife and domestic livestock watering when site-specific NEPA is completed that identifies the need for the stock tanks and are an also exception to this vision. Proper functioning condition is defined as follows: Wetland vegetation has a diverse age-class distribution, a diverse composition, and includes species that indicate maintenance of riparian soil moisture characteristics. Wetland vegetation is comprised of plant communities that have root masses that dissipate energy during high flows and has adequate cover to protect shores. Wetland plants exhibit high vigor, resist compaction, and provide material for nutrient cycling.

Maintain or attain proper functioning condition of riparian stream and spring areas by the year 2030. Proper functioning condition is defined as follows: Riparian vegetation has a diverse age-class distribution, a diverse composition, and includes species that indicate maintenance of riparian soil moisture characteristics. Streambank vegetation is comprised of plant communities that have root masses capable of withstanding high streamflow events, and has adequate cover to protect banks and dissipate energy during high flows. Riparian plants exhibit high vigor, resist compaction, and where soils are appropriate, provide an adequate source of coarse and / or large woody debris. Proper functioning condition is defined as follows: Riparian vegetation has a diverse age-class distribution, a diverse composition, and includes species that indicate maintenance of riparian soil moisture characteristics. Streambank vegetation is comprised of plant communities that have root masses capable of withstanding high streamflow events, and has adequate cover to protect banks and dissipate energy during high flows. Riparian plants exhibit high vigor, resist compaction, and where soils are appropriate, provide an adequate source of coarse and / or large woody debris.

Woody riparian species has at least two age classes and occurs where potential allows at reservoir wetlands. In general, soil condition is in satisfactory condition. Soil quality is being sustained, and the soil is functioning properly and normally by 2030.

Perennial, free flowing springs exist, when consistent with climate, watershed size, and geomorphology. Perennial free-flowing streams occur in the major canyons (e.g. Lower Clear Creek, and Jack Canyon). Native fish have secure, self-sustaining populations within their historic habitat in Lower Clear Creek.

Ashurst Lake, Kinnikinick, Morton, Coconino Lake provide fishery opportunities for recreation and habitat is improved to meet this opportunity. Ashurst Lake is managed as a blue ribbon fishery with improved facilities. Ashurst and Forked Pine Campgrounds at Ashurst Lake are converted to day use only. Overnight camping opportunities at the lake have been re-located to other suitable areas and sites nearby. Area lakes identified for sport fishing are managed to be the best fisheries they can be. Where necessary, lakes and reservoirs (e.g. Coconino and Ashurst) have been drained to remove undesirable species, and bottoms have been improved, e.g. seeded, fish barriers installed, etc. Some sites are walk-in only for user experience and resource protection considerations, e.g. at Coconino. Access roads and trails have been assessed to meet multiple needs, and sanitation and other facilities have been upgraded to meet demand and health and safety requirements.

A comprehensive management plan at the Jacks Canyon Climbing Area is completed to address multiple resource impacts through the LSA process for climbing areas. The vision is for designated primitive camps at Jacks Canyon sites (20-100 campsites) over the next 20-year period. A parking area has been constructed, at least one two-set toilet has been installed, the access road improved, damaged areas, including un-needed campsites and roads, have been rehabilitated, and interpretive and directional information is provided. Forest Service maintains a strong presence on the ground, including for public contact, law enforcement, and area management.

The portions of Upper Jacks Canyon and Lower Jacks Canyon Inventoried Roadless Areas (IRA's) are managed for their roadless character, in compliance with law and regulation.

All developed recreation sites are maintained in good condition, with up to date facilities, signing, interpretation, and other features, and meeting all related health and safety guidelines and requirements with implementation schedule for completion outlined in the Forest Recreation Capital Investment Program. Kinnikinick Campground is maintained as a rustic campground (fewer amenities, less convenience, etc.) to standard. A vegetation management plan(s) has been prepared that provides guidance for long-term maintenance of developed sites.

Through analysis, desirable types and levels of outfitter guide activities have been identified, and a prospectus for permit issuance has been advertised. Outfitter guide uses are in balance with overall recreation and other resource needs. Special Use Permits have site-specific Plans of Operations. Big game hunting is managed in such a way that

resources are protected as well as hunting opportunity and experience exists. Repair of road damage is targeted at 100% of the miles of road damaged by hunters repaired in twelve months of the damage.

Off Highway Vehicle (OHV) use is managed to protect resources and user experience, including for the various types of OHV use, e.g. 4x4, ATV, single track. Long distance and local motorized trail opportunities have been created, including loop trails from communities.

Hay Lake Desired Future Conditions

The desired future condition for the Hay Lake Complex was a collaborative effort between the Coconino National Forest, Other Agencies, Northern Arizona University, the Citizens Working Group and input from a public meeting in April 2003.

A minimum road network for lake access is designated. Road use is limited (closed to Soldier Annex Dam/Upper Tremaine). Road access to Soldier is improved. There is a road to a small parking area (3-5 vehicles) and trailhead for a trail to a wildlife viewing site in the Hay Lake/Tremaine Lake area. Three places are recommended for bird watching in the Hay Lake Complex: 1) east side of Hay Lake, 2) Tremaine Lake, and 3) Tremaine Lake Narrows. There are developed hiking and interpretive trails for fishing/birding at Tremaine Lake and for bird viewing at Hay Lake.

The various water storage and delivery systems within Hay Lake Complex are being maintained and are at satisfactory operational levels. Maintain the water delivery system of ditch system and manage the water in a way to strategically conserve water where there is the most flexibility in future distribution. A water management plan is completed in cooperation with the NRCS and the Hay Lake Water Group.

Tremaine Lake is managed for migratory waterfowl, bald eagle and other watchable wildlife. Tremaine Lake is managed for non-motorized boating and fishing and is in harmony with nesting and migratory waterfowl, bald eagle and other watchable wildlife.

Reduce the crayfish populations in all lakes, with the result an improvement in aquatic habitat.

Recreational activities do not impact wildlife in key areas during critical time periods (breeding, fawning, and bird nesting) at Hay Lake and Tremaine Lake. Woody riparian species has at least two age classes and occurs where potential allows at reservoir wetlands.

Long Lake provides fishery opportunities for recreation and habitat is improved to meet this opportunity. All developed recreation sites are maintained in good condition, with up to date facilities, signing, interpretation, and other features, and meeting all related health and safety guidelines and requirements with implementation schedule for completion outlined in the Forest Recreation Capital Investment Program. Access roads and trails have been assessed to meet multiple needs, and sanitation and other facilities have been

upgraded to meet demand and health and safety requirements. A vegetation management plan(s) has been prepared for the Hay Lake Complex at developed sites that provides guidance for long-term maintenance of developed sites.

Dispersed sites near Long Lake are designated dispersed campsites and have been identified and delineated, and are managed for resource protection and user satisfaction. In highest use areas, designated dispersed campsites have been identified and delineated, and are managed for resource protection and user satisfaction. Other areas with high resource values (i.e., wetlands) have been identified, and designated dispersed sites have been designated and marked to avoid impacts to high resource values. Areas where significant problems exist have been identified, analyzed and addressed, with necessary management changes made to balance use with resource objectives. Interpretation facilities and materials exist to protect user experience and resource condition.

Other areas with high resource values (i.e., wetlands) have been identified, and designated dispersed sites have been designated and marked to avoid impacts to high resource values. Areas where significant problems exist have been identified, analyzed and addressed, with necessary management changes made to balance use with resource objectives. Interpretation facilities and materials exist to protect user experience and resource condition.

Possible Management Actions for the Anderson Mesa Landscape Assessment Area

Possible Management Actions have been outlined by the Citizens Working Group, as well as by Forest Service specialists. Possible Management Actions are outlined for two possible scenarios on the Mesa. First, when the existing condition does not match the desired future condition, a possible management action is proposed to move the existing condition toward the desired future condition. Second, when the existing condition and the desired future condition match, a possible management action is proposed to maintain the current condition.

The vegetation groups that were used in the existing conditions and desired future conditions are also the basis for the Possible Management Actions summary for all resource areas. Many of the recreational and cultural resource items exist across the entire Anderson Mesa Landscape Analysis Area and cannot be easily split into individual vegetation types. Where possible, recreation Possible Management Actions were assigned to a particular vegetation zone. Those recreation items that could not be split easily are discussed at existing conditions common to all vegetation types. The Hay Lake area is also discussed separately from specific vegetative zones.

Possible Management Actions Common to All Vegetation Zones

The following are possible management actions common to all vegetation types.

Recreation Opportunity Spectrum Possible Management Actions:

- Update ROS inventory as part of FP revision
- Update ROS inventory after RAP and adjust as necessary from any changes in proposed road management.
- Identify areas where ROS needs to be adjusted
- Update ROS on a project-by-project basis.
- Increase non-motorized ROS classes through roads reduction and obliteration.

Scenery Management System (SMS) Possible Management Actions:

- Complete SMS inventory as part of FP revision.
- Complete SMS inventory w/in 10 years.
- Complete SMS on project-by-project basis.
- Complete SMS inventory w/in 2 years.

New Recreation Uses Possible Management Actions:

- Create a strong interpretive program for new recreation uses for the mesa area that helps the Forest Service attain public cooperation toward balanced management and resource protection.
- Assess new uses on the Mesa on site-by-site basis.
- Assess new recreation uses through a mesa-wide comprehensive recreation management plan.
- Assess new recreation uses through Forest Plan revision.

- Permit desired activities for new recreation uses.

Area-Wide Interpretation Possible Management Actions:

- Create interpretive sites/displays at developed recreation sites, trails, Jacks Canyon Climbing area, wetland sites, Hay Lake, selected cultural resource sites, inventoried roadless sites, grasslands etc.
- Create interpretive programs to support vehicle use policy and seasonal closures.
- Develop feedback mechanism to get results of researchers back to agency officials.
- Develop environmental education partnership with Flagstaff and Winslow public schools on unique features on Anderson Mesa
- Develop environmental education opportunity in cooperation with Northern Arizona Audubon Society for Important Birding Area that has been designated on Anderson Mesa.
- Utilize partners and cooperators to develop interpretation opportunities and environmental education opportunities. . I.e. Diablo Trust, Antelope Foundation, AWF, Audubon etc.

Archaeological Resource Possible Management Actions:

- Use Site Stewards/volunteers or NAU class to assist in relocating/inventorying of fire sensitive sites.
- Inventory fire sensitive sites as part of new projects.
- Seek grant/US Forest Service funding for contracted ethnographic study of area.
- Coordinate with local tribes on ethnographic studies of Anderson Mesa.
- Utilize graduate student from local university to provide ethnographic study of area.
- Place interpretive signs in Chavez and Walnut areas.
- Place heritage resource protection signs at all large sites and other sites receiving high visitation.
- Prioritize sites to be interpreted.
- Interpret two sites from Native American perspective.
- Coordinate with local tribal offices for interpretation opportunities on Forest Service land.
- Partner with local tribes to provide input and guidance on interpretation opportunities.
- Place signs in high use recreation areas.
- Noxious Weeds Possible Management Actions
- Utilize effective techniques for elimination relative to species.
- Refer to the DEIS Integrated Treatment of Noxious and Invasive Weeds.
- Treat Weeds by Priority as recommended in the above DEIS.
    1. Category A Weeds
    2. Category B Weeds
    3. Category C Weeds
    4. Using adaptive management.
- Continue surveying additional acreages to identify populations.

- Limit off-road travel in areas where known infestations occur.

Pinyon-Juniper Woodland Possible Management Actions

The following are possible management actions for the Pinyon-Juniper Woodland vegetation type.

Possible Vegetative Treatments Possible Management Actions:

- Mechanical treatments of overstory.
- Select conifer removal below 40% canopy cover, remove most young-growth junipers, lop & scatter juniper slash over bare soils or areas with low vegetative ground covers to protect and promote herbaceous growth and productivity. Use silvicultural prescription. Wind row areas with significant juniper slash.
- Implementation methods may include the following: agra-ax or pushing, possibly rolling/crushing, use of hand crews in sparsely covered areas, fuel wooding excessive fuels in all areas.
- Decrease pj canopy covers to less than 40% on about 35,000 acres (estimated at about 1/3rd of total acres, see FERA maps and resource photos for detailed locations) to improve plant composition, diversity and productivity About 17,219 additional acres were burned during 2004 Jacket Fire effectively reducing canopy cover in a mosaic pattern.
- Leave a mosaic of mixed seral stages (PJ canopy cover variability)
- In areas with low canopy cover of trees and adjacent to grasslands, consider managing towards large herbaceous interspaces by selective PJ removal.
- Mycorrhizal fungus inoculation on seeding operations.
- Use structural (fences, water distribution) and non-structural improvements (grazing rotations) to improve distribution of cattle and control use of understory plants especially in years with low herbaceous productivity.
- Manage where potential exists for improved browse.
- Select canopy reduction (open canopies) with emphasis on removal of younger growth junipers.
- Seeding native shrubs identified in PPC seems to be unproven but worthy of testing.
- Soil disturbance and scarification to provide seedbed for shrub reproduction. Careful not to expose highly calcareous subsoil.

Soil Condition Possible Management Actions:

- Select canopy reduction (open canopies) with emphasis on removal of younger growth junipers where canopies exceed 40%.
- Lop and scatter, and slash management around existing plants to protect and promote plant growth.
- Seeding native species identified in PPC.
- Improved grazing strategy (rotations and deferred grazing until soil is improved)
- Manage grazing on wet soils.

- Select appropriate prescribed burning practices where warranted. Lop and scatter preferred unless heavy fuel loads exist. Where burning needed, fuel conditions should result in low burn severities.

Fire Regime Possible Management Actions:

- Select burning practices including fire use for resource benefit, confine strategy, prescribed burns under proper fuel conditions to produce low burn severities in excessive fueled areas.
- Complete analysis for implementing fire use for resource benefits across Anderson Mesa.

Wildlife Habitat Improvement Possible Management Actions:

- Possible vegetation and possible fire regimes management actions listed above are the means to improve or maintain wildlife habitat in this vegetation zone.
- Manage where potential exists for improved browse.
- Select canopy reduction (open canopies) with emphasis on removal of younger growth junipers and young growth ponderosa pine.
- Prescribed burning, fire-use policy, or confine strategy for wildfires to reduce juniper growth and maintain openings.
- Seeding native shrubs identified in PPC seems to be unproven but worthy of testing..
- Soil disturbance and scarification to provide seedbed for shrub reproduction. Careful not to expose highly calcareous subsoil.
- Lop and scatter, and slash management around existing plants to protect and promote plant growth.
- Reduce road density in deer habitat to 1 mile/square mile.
- Seasonal closure in deer habitat areas during fawning and the breeding.
- In cooperation with Arizona Game and Fish, reduce deer tags in hunt units on Anderson Mesa.
- Remove or relocate fences directly adjacent to roads.
- Designate sanctuaries, designate roadless areas, and establish seasonal closure areas.
- Expand existing seasonal closures

Jacks Canyon Climbing Area Possible Management Actions:

- Options at Jacks Canyon are for primitive vs. developed site management then write a management plan to fit that option.
- Write management plan for Jacks Canyon Climbing area. Management plan should address potential target group (local climbers, national-level climbing area; consideration of O&G needs and/or/vs. keeping the area open to public) parameters for vehicle access, trails, sanitation, boundaries of the site etc to reduce current resource impacts.
- Designate currently unclassified road 208 as main access route to climbing area and improve road surface

- Designate parking area at trailhead out of Lower Jacks Canyon Inventoried Roadless Area.
- Designate trailhead and trail system within canyon.
- Designate no cross-country hiking travel.
- Explore option of a toilet located within the canyon to reduce sanitation issues in the canyon.
- Designate dispersed campsites.
- Use site host to manage dispersed camping site. Volunteers/host or climbing group(s) to provide on-the-ground presence
- Camp for free
- Camp for fee
- Rehabilitate damaged and braided roads.
- Develop interpretive theme for the area, design and install materials and displays with full spectrum of site and area information, including information about resources, Leave No Trace, etc.
- Establish working relationship with interested climbing groups for work at the site, for grants, etc.
- Develop a Recreation Opportunity Guide (ROG) for the area.

Inventoried Roadless Areas Possible Management Actions:

- Decommission roads in designated IRA's areas. Ensure roads remaining minimize effects to resources such as archaeological sites, caves, sensitive wildlife/plant locations
- Create off-road vehicle closure area adjacent to the IRA.
- Create roadless buffer around the IRA's
- Sign the IRA's as off-road vehicle prohibited areas.
- Manage to provide specific experiences such as hunting (foot/horse archery) & possibly add other restrictions to provide this experience
- Designate campsites to reduce the potential for off-road use or social roads
- Maintain and restore damaged areas.
- Sign and interpret IRA's for effective management.

Developed Recreation Possible Management Actions:

- Make sites higher priority within Forest CIP
- Implement Fee Demonstration area at selected sites, or all sites, to improve sites.
- Decommission sites in disrepair. Reduce the number of sites to better assign with funding.
- Install concessionaire at sites with responsibilities for maintenance.
- Pursue grants to aid with funding opportunities for improvements.
- Develop interpretation plan, including theme(s) related to Anderson Mesa issues, design and install materials and displays.
- Expand existing developed recreation sites and eliminate others so focus is on maintaining 1 site vs. 3 (i.e. Pinegrove Campground expansion; decommission Forked Pine & Ashurst Campgrounds).

Dispersed Recreation Possible Management Actions:

- On a case-by-case basis, concentrated use dispersed camping areas has been considered for management with fees and by concessionaire in order to provide desirable experiences and for protection of resources
- Designate transportation system in order to manage campsite locations.
- Designate dispersed sites.
- User fee w/ developed sanitation facilities.
- Prohibit camping along Ashurst road.
- Develop alternative locations to dispersed camping along Ashurst road.
- No change from current. . Do not close any informal camping areas or change any use type of existing camping areas
- Day use only along Ashurst road.
- Designate large group camp sites.
- Fee demo for Ashurst.
- Develop map (for fee) or handout showing where developed, designated dispersed and dispersed camping is available on the forest so making it easy for people to find a location to camp.
- Designate backcountry dispersed camping sites adjacent to the rim of East Clear Creek, in Padre Canyon IRA, and along the rim adjacent to Jacks Canyon. Manage road system adjacent to the backcountry-dispersed sites at a low density (1 mi/sq mi or less).
- Designate backcountry dispersed camping sites in areas that may have road densities decreased to 1 mi/sq mi or less.
- Where feasible, e.g. through road reduction, create additional non-motorized backcountry opportunities.
- Designate backcountry dispersed camping sites on the AZ Trail especially adjacent to wetlands.

Outfitter Guide/Big Game Hunting Possible Management Actions:

- Complete O&G Needs Assessments to determine the type/quantity of O&G activities for this area
- Manage outfitter guides to standard.
- Forest Service compliance checks on outfitter guide permits.
- Surcharge on outfitter guide permits for road repair.
- Contingency fund w/ Arizona Game and Fish and Forest Service for road repair. Fund must be able to roll over from year-to-year.
- Seasonal road closure for motorized game retrieval in Padre Canyon roadless area.
- Require the use of ATV’s rather than 4 x 4 vehicular retrieval of game.
- Require no off-road vehicle game retrieval.
- Provide different hunt experience levels.
- Provide quiet areas w/ seasonal closures.
- Seasonal closure for hunt areas if road system is impassable.
- Surcharge on hunt tags for road repair.
- Encourage non-motorized hunting opportunities.

- Work with AG&FD to best time hunts for resource protection.
- Better define and enforce when roads should not be used (i.e. wet) to minimize road repairs

OHV Possible Management Actions:

- A motorized trail system has been identified and implemented offering short and long-distance OHV and 4-WD recreation.
- Create a road/trail system the offers a variety of user experiences (designated trail and road system) such as:
  1) Single track trail for motorcycles.
  2) Long distance motorized trail. (Possible route for long-distance motorized trail on 82 road.)
  3) Challenging trail system for 4 x 4—possible route of FR69 at Jacks Canyon, or 82 road along Jaycox Mountain.
- Enforcement.
- Road system that is closed unless signed open.
- Licensed vehicles only allowed on Forest roads.
- More Forest Service presence—patrols.
- Public education through multiple outlets.
- Designate a loop motorized trail system around subdivisions.
- Volunteers for education.
- Create an off-road use area
- Establish partnerships with interested organizations, e.g. user groups, to co-manage trails and fund work in the area.
- Publish a map or area guide w/ user experiences (loop, expert trails, motorcycles only etc.) so the public has info to comply w/ area management.

Trails Possible Management Actions:

- Manage the trailheads on the Arizona Trail to standard.
  1. Do within 5 years
  2. Do within 10 years
  3. Use volunteers to implement improvements.
  4. Attain grants for trailhead improvement.
  5. Develop interpretation plan for each site and implement.
- Acquire outside funding to maintain/improve trails.
- Use volunteers to maintain/improve trails.
- If backcountry use increases – designate camping sites especially in sensitive areas such as wetlands or key pronghorn habitat.
- Use volunteers and Forest Service personnel to assess and re-establish the Palatkwapi/Chavez trail.
- Use volunteers and Forest Service personnel to assess and re-establish the Palatkwapi/Chavez trail. Place interpretive signs, print brochures.
- Utilize Forest Service personnel develop management plan for the Palatkwapi/Chavez trail.
- Coordinate with tribes on interpretation plans for the Palatwapi/Chavez Trail

Private Lands Possible Management Actions:

- Identify parcels that would be desirable for Forest Service land acquisition.
- Explore options for purchase of inholdings that are desirable for land acquisition.
- Acquire inholdings through partnerships with interested organizations, e.g. Rocky Mt. Elk Foundation, Trust for Public Lands, and others.

Western Wheat-Blue Grama Grasslands Possible Management Actions

The following are possible management actions for the Western Wheat-Blue Grama Grasslands vegetation type.

Possible Vegetative Treatments Possible Management Actions:

- Use structural (fences, water distribution) and non-structural improvements (grazing rotations) to improve distribution of cattle and control use of understory plants especially in years with low herbaceous productivity.
- Select conifer removal and lop and scatter with hand crews and in some cases, agra-axe in PJ encroached areas. Lop and scatter juniper to protect and promote herbaceous growth. Consider windrows or leaving slash at about 10 - 36 inches (10 to 24 inches Forest Service prescriptions) in height for hiding cover.
- Seed native species identified in PPC in areas of poor herbaceous understory composition or in burned areas.
- Select burning practices (fire use policy, confine strategy, appropriate suppression response, prescribed fire under proper fuel conditions (sufficient herbaceous cover and wind to carry).
- Adjust hunt numbers.
- Consider sludge to decrease broom snakeweed populations.
- Mycorrhizal fungus inoculation on seeding operations.
- Monitor and change management strategy as needed.

Soil Condition Possible Management Actions:

- PJ lop and scatter to protect and promote understory plant growth where pinyon-juniper is encroaching in grassland sites.
- Seeding native species identified in PPC.
- Improved grazing strategy (rotations and deferred grazing until soil is improved)
- Manage grazing on wet soils.
- Select appropriate prescribed burning practices where warranted. Lop and scatter preferred unless heavy fuel loads exist. Where burning needed, fuel conditions should result in low burn severities.

Fire Regime Possible Management Actions:

- Select burning practices (fire use policy, confine strategy, appropriate suppression response, prescribed fire under proper fuel conditions (sufficient herbaceous cover and wind to carry).
- Complete analysis for implementing fire use for resource benefits across Anderson Mesa.

- Increase herbaceous component in grasslands sufficient to carry fire.
- Mechanical treatment of P/J and ponderosa encroachment possibly coupled with prescribed burning when and where appropriate in the short-term.

Wildlife Habitat Improvement Possible Management Actions:

- Possible vegetation and possible fire regimes management actions listed above are the means to improve or maintain wildlife habitat in this vegetation zone.
- Implement provisions in the Anderson Mesa Pronghorn Management Plans (Arizona Game And Fish)
- Continue decrease in elk numbers through hunting regulations
- Removal of encroachment trees in grasslands
- Prescribed fire (natural and broadcast burning) in grasslands and meadows
- Slash should be lopped below 2 feet, left on site for microclimates.
- Decommission roads in pronghorn antelope fawning habitat.
- Use slash management to promote vegetative diversity and low enough for antelope site distance.
- Maintain hiding cover in key pronghorn antelope fawning areas
- Enhance forb nutritional value through fire or fertilization.
- Move hunt season out of breeding season.
- Maintain or expand seasonal road closure in antelope habitat
- Monitoring—tie collar data to past/current grazing and past treatments
- Monitor plat species composition.
- Determine existing and desired seral stages on grasslands and meadows to meet pronghorn habitat.
- Remove fences to reduce impediments to animal movement.
- Reconstruct fences to pronghorn antelope standards to reduce impediments to animal movement.
- Thin encroachment trees to reduce impediments to animal movement.
- Remove old slash carcasses from pushes by grinding, windrowing, or burning to reduce impediments to animal movement.
- Tie vegetative treatments to collar data for disconnects between herds.
- Remove or relocate fences directly adjacent to roads.
- Designate sanctuaries, designate roadless areas, and establish seasonal closure areas.
- Expand existing seasonal closures
- Reduce the number of roads in antelope fawning habitat.
- Endorse the new Important Birding Area (IBA) on Anderson Mesa.
- Initiate pro-active programs that encourage the re-stocking of Anderson Mesa with Gunnison’s Prairie Dogs. Encourage volunteers to engage in this effort.
- To successfully manage for sustainable pronghorn populations, the CNF should initiate monitoring and management practices that identifies as well as promotes the preferred forage for pronghorn.
- Future management actions must allow adequate residual cover to remain on the ground through the fall and winter months and remain there, through the spring

fawning season. The desired amount of cover is 10". That cover should be taken out of livestock production and dedicated towards healthy wildlife populations.
- Initiate the re-seeding of native grasses and forbs in areas that pronghorn use.
- Control the grazing of cattle in an equitable degree with elk and to a reduced level that does not negate any benefit to pronghorn.

Ephemeral and Temporary Wetlands Possible Management Actions:
- Management of cattle grazing through AOI when monitoring displays a need for change (different grazing strategies).
- Recommendations to Arizona Game and Fish on hunt numbers for elk/deer
- Fencing when necessary.
- Use of annual operating instructions to make adjustments in grazing schedules as necessary.
- Monitoring of use in temporary and ephemeral wetlands.
- Manage temporary and ephemeral wetlands in connection with seasonal and semi-permanent wetlands to create a wetland complex that has a variety of wetland types in close proximity. Possible examples could be Gonzalo No 1 tank with Pine/Camillo/Mud Lake; Daze Lake with Hay Lake/Tremaine/Soldier Lake/ Soldier Annex/ Long Lake.
- Designate stock ponds that will be left in wetlands for wildlife habitat. Criteria to review for retaining a stock pond should include at a minimum the following criteria: the location and dependability of adjacent waters, current water uses and rights, relative size of stock pond to wetland, relation of water to surrounding habitat.
- Designate stock ponds to be removed to maximize wetland potential. Criteria to review for removing a stock pond should include at a minimum the following criteria: the location and dependability of adjacent waters, current water uses and rights, relative size of stock pond to wetland, relation of water to surrounding habitat and other wetlands, the frequency of inundation of the wetland, whether the stock pond is the reason why the site is a wetland or not, the impacts of creating additional waters, the use of the site and the surrounding water sites without the stock pond.
- Maintain or attain proper functioning condition of wetland areas by the year 2009.

Outfitter Guide/Big Game Hunting Possible Management Actions:
- Complete O&G Needs Assessments to determine the type/quantity of O&G activities for this area
- Manage outfitter guides to standard.
- Forest Service compliance checks on outfitter guide permits.
- Surcharge on outfitter guide permits for road repair.
- Contingency fund w/ Arizona Game and Fish and Forest Service for road repair. Fund must be able to roll over from year-to-year.
- Seasonal road closure for motorized game retrieval in Padre Canyon roadless area.
- Require the use of ATV's rather than 4 x 4 vehicular retrieval of game.

- Require no off-road vehicle game retrieval.
- Provide different hunt experience levels.
- Provide quiet areas w/ seasonal closures.
- Seasonal closure for hunt areas if road system is impassable.
- Surcharge on hunt tags for road repair.
- Encourage non-motorized hunting opportunities.
- Work with AG&FD to best time hunts for resource protection.
- Better define and enforce when roads should not be used (i.e. wet) to minimize road repairs

OHV Possible Management Actions:

- A motorized trail system has been identified and implemented offering short and long-distance OHV and 4-WD recreation.
- Create a road/trail system the offers a variety of user experiences (designated trail and road system) such as:
  1) Single track trail for motorcycles.
  2) Long distance motorized trail. (Possible route for long-distance motorized trail on 82 road.)
  3) Challenging trail system for 4 x 4—possible route of FR69 at Jacks Canyon, or the 82 road along Jaycox Mountain.
- Enforcement.
- Road system that is closed unless signed open.
- Licensed vehicles only allowed on Forest roads.
- More Forest Service presence—patrols.
- Public education through multiple outlets.
- Designate a loop motorized trail system around subdivisions.
- Volunteers for education.
- Create an off-road use area
- Establish partnerships with interested organizations, e.g. user groups, to co-manage trails and fund work in the area.
- Publish a map or area guide w/ user experiences (loop, expert trails, motorcycles only etc.) so the public has info to comply w/ area management.

Trails Possible Management Actions:

- Acquire outside funding to maintain/improve trails.
- Use volunteers to maintain/improve trails.
- If backcountry use increases – designate camping sites especially in sensitive areas such as wetlands or key pronghorn habitat.
- Use volunteers and Forest Service personnel to assess and re-establish the Palatkwapi/Chavez trail.
- Use volunteers and Forest Service personnel to assess and re-establish the Palatkwapi/Chavez trail. Place interpretive signs, print brochures.
- Utilize Forest Service personnel develop management plan for the Palatkwapi/Chavez trail.
- Coordinate with tribes on interpretation plans for the Palatwapi/Chavez Trail

Private Lands Possible Management Actions:

- Identify parcels that would be desirable for Forest Service land acquisition.
- Explore options for purchase of inholdings that are desirable for land acquisition.
- Acquire inholdings through partnerships with interested organizations, e.g. Rocky Mt. Elk Foundation, Trust for Public Lands, and others.

Montane Meadows Possible Management Actions

The following are possible management actions for the montane meadows vegetation type.

Possible Vegetative Treatments Possible Management Actions:

- Use structural (fences, water relocations) and non-structural improvements (grazing rotations) to improve distribution of cattle and control use of understory plants especially in years with low herbaceous productivity.
- Conifer removal and lop and scatter to protect and promote vegetative growth with hand crews in PJ encroached areas.
- Seed native species identified in PPC in areas of poor herbaceous understory composition. Consider use of imprinter or seed and imprint to improve soil condition and vegetative productivity.
- Mycorrhizal fungus inoculation on seeding operations.

Soil Condition Possible Management Actions:

- PJ lop and scatter to protect and promote understory plant growth where pinyon-juniper is encroaching in grassland sites.
- Seeding native species identified in PPC.
- Improved grazing strategy (rotations and deferred grazing until soil is improved)
- Manage grazing on wet soils.
- Select appropriate prescribed burning practices where warranted. Lop and scatter preferred unless heavy fuel loads exist. Where burning needed, fuel conditions should result in low burn severities.

Fire Regime Possible Management Actions:

- Select burning practices (fire use policy, confine strategy, appropriate suppression response, prescribed fire under proper fuel conditions (sufficient herbaceous cover and wind to carry).
- Complete analysis for implementing fire use for resource benefits across Anderson Mesa.
- Increase herbaceous component in grasslands sufficient to carry fire.
- Mechanical treatment of P/J and ponderosa encroachment possibly coupled with prescribed burning when and where appropriate in the short-term.

Wildlife Habitat Improvement Possible Management Actions:

- Possible vegetation and possible fire regimes management actions listed above are the means to improve or maintain wildlife habitat in this vegetation zone.
- Implement provisions in the Anderson Mesa Pronghorn Management Plans (Arizona Game And Fish)
- Continue decrease in elk numbers through hunting regulations
- Removal of encroachment trees in grasslands
- Prescribed fire (natural and broadcast burning) in grasslands and meadows
- Slash should be lopped below 2 feet, left on site for microclimates.
- Decommission roads in pronghorn antelope fawning habitat.
- Use slash management to promote vegetative diversity and low enough for antelope site distance.
- Maintain hiding cover in key pronghorn antelope fawning areas
- Enhance forb nutritional value through fire or fertilization.
- Move hunt season out of breeding season
- Maintain or expand seasonal road closure in antelope habitat
- Monitoring—tie collar data to past/current grazing and past treatments
- Monitor plat species composition.
- Determine existing and desired seral stages on grasslands and meadows to meet pronghorn habitat.
- Remove fences to reduce impediments to animal movement.
- Reconstruct fences to pronghorn antelope standards to reduce impediments to animal movement.
- Thin encroachment trees to reduce impediments to animal movement.
- Remove old slash carcasses from pushes by grinding, windrowing, or burning to reduce impediments to animal movement.
- Tie vegetative treatments to collar data for disconnects between herds.
- Remove or relocate fences directly adjacent to roads.
- Designate sanctuaries, designate roadless areas, and establish seasonal closure areas.
- Expand existing seasonal closures
- Reduce the number of roads in antelope fawning habitat.
- Endorse the new Important Birding Area (IBA) on Anderson Mesa.
- Initiate pro-active programs that encourage the re-stocking of Anderson Mesa with Gunnison's Prairie Dogs. Encourage volunteers to engage in this effort.
- To successfully manage for sustainable pronghorn populations, the CNF should initiate monitoring and management practices that identifies as well as promotes the preferred forage for pronghorn.
- Future management actions must allow adequate residual cover to remain on the ground through the fall and winter months and remain there, through the spring fawning season. The desired amount of cover is 10". That cover should be taken out of livestock production and dedicated towards healthy wildlife populations.
- Initiate the re-seeding of native grasses and forbs in areas that pronghorn use.
- Control the grazing of cattle in an equitable degree with elk and to a reduced level that does not negate any benefit to pronghorn.

Outfitter Guide/Big Game Hunting Possible Management Actions:

- Complete O&G Needs Assessments to determine the type/quantity of O&G activities for this area
- Manage outfitter guides to standard.
- Forest Service compliance checks on outfitter guide permits.
- Surcharge on outfitter guide permits for road repair.
- Contingency fund w/ Arizona Game and Fish and the Forest Service for road repair. Fund must be able to roll over from year-to-year.
- Seasonal road closure for motorized game retrieval in Padre Canyon roadless area.
- Require the use of ATV's rather than 4 x 4 vehicular retrieval of game.
- Require no off-road vehicle game retrieval.
- Provide different hunt experience levels.
- Provide quiet areas w/ seasonal closures.
- Seasonal closure for hunt areas if road system is impassable.
- Surcharge on hunt tags for road repair.
- Encourage non-motorized hunting opportunities.
- Work with AG&FD to best time hunts for resource protection.
- Better define and enforce when roads should not be used (i.e. wet) to minimize road repairs

OHV Possible Management Actions:

- A motorized trail system has been identified and implemented offering short and long-distance OHV and 4-WD recreation.
- Create a road/trail system the offers a variety of user experiences (designated trail and road system) such as:
  1) Single track trail for motorcycles.
  2) Long distance motorized trail. (Possible route for long-distance motorized trail on 82 road.)
  3) Challenging trail system for 4 x 4—possible route of FR69 at Jacks Canyon, or the 82 road along Jaycox Mountain.
- Enforcement.
- Road system that is closed unless signed open.
- Licensed vehicles only allowed on Forest roads.
- More Forest Service presence—patrols.
- Public education through multiple outlets.
- Designate a loop motorized trail system around subdivisions.
- Volunteers for education.
- Create an off-road use area
- Establish partnerships with interested organizations, e.g. user groups, to co-manage trails and fund work in the area.
- Publish a map or area guide w/ user experiences (loop, expert trails, motorcycles only etc.) so the public has info to comply w/ area management.

Pinyon-Juniper/Blue Grama Woodland Possible Management Actions

The following are possible management actions for the Pinyon-Juniper/Blue Grama Woodland vegetation type.

Possible Vegetative Treatments Possible Management Actions:

- Select conifer removal (especially young-growth junipers) well below 35% canopy cover, and lop & scatter. Use silvicultural prescription.
- Implementation methods may include the following: agra-ax or pushing, possibly rolling/crushing, fuel wooding excessive fuels and burning excessive fuels. Wind row areas with significant juniper slash.
- Leave a mosaic of openings greater than about 1 acre in size and maybe up to 10 – 50 acres (size and pattern TBD by IDT) intermingled with later seral stages (PJ canopy cover variability).
- In areas with low canopy cover of trees and adjacent to grasslands, consider managing towards large herbaceous interspaces by complete PJ removal.
- Create savannah type or manage towards complete grassland.
- Consider seeding native plants identified in PPC after about 5 years of treatment if poor establishment of herbaceous understory exists.
- Mycorrhizal fungus inoculation on seeding operations.
- Use structural (fences, water distribution) and non-structural improvements (grazing rotations) to improve distribution of cattle and control use of understory plants especially in years with low herbaceous productivity.

Soil Condition Possible Management Actions:

- PJ lop and scatter to protect and promote understory plant growth where pinyon-juniper is encroaching in grassland sites.
- Seeding native species identified in PPC.
- Improved grazing strategy (rotations and deferred grazing until soil is improved)
- Manage grazing on wet soils.
- Select appropriate prescribed burning practices where warranted. Lop and scatter preferred unless heavy fuel loads exist. Where burning needed, fuel conditions should result in low burn severities.

Fire Regime Possible Management Actions:

- Select burning practices including (fire use policy, confine strategy, prescribed burns under proper fuel conditions to produce low burn severities in excessive fueled areas).
- Complete analysis for implementing fire use for resource benefits across Anderson Mesa.

Wildlife Habitat Improvement Possible Management Actions:

- Possible vegetation and possible fire regimes management actions listed above are the means to improve or maintain wildlife habitat in this vegetation zone.
- Remove fences to reduce impediments to animal movement.
- Reconstruct fences to pronghorn antelope standards to reduce impediments to animal movement.

- Thin encroachment trees to reduce impediments to animal movement around Jaycox Mountain.
- Tie vegetative treatments to collar data for disconnects between herds.
- Remove or relocate fences directly adjacent to roads.
- Designate sanctuaries, designate roadless areas, and establish seasonal closure areas.
- Expand existing seasonal closures

Outfitter Guide/Big Game Hunting Possible Management Actions:

- Complete O&G Needs Assessments to determine the type/quantity of O&G activities for this area
- Manage outfitter guides to standard.
- Forest Service compliance checks on outfitter guide permits.
- Surcharge on outfitter guide permits for road repair.
- Contingency fund w/ Arizona Game and Fish and the Forest Service for road repair. Fund must be able to roll over from year-to-year.
- Seasonal road closure for motorized game retrieval in Padre Canyon roadless area.
- Require the use of ATV's rather than 4 x 4 vehicular retrieval of game.
- Require no off-road vehicle game retrieval.
- Provide different hunt experience levels.
- Provide quiet areas w/ seasonal closures.
- Seasonal closure for hunt areas if road system is impassable.
- Surcharge on hunt tags for road repair.
- Encourage non-motorized hunting opportunities.
- Work with AG&FD to best time hunts for resource protection.
- Better define and enforce when roads should not be used (i.e. wet) to minimize road repairs

OHV Possible Management Actions:

- A motorized trail system has been identified and implemented offering short and long-distance OHV and 4-WD recreation.
- Create a road/trail system the offers a variety of user experiences (designated trail and road system) such as:
  1) Single track trail for motorcycles.
  2) Long distance motorized trail. (Possible route for long-distance motorized trail on 82 road.)
  3) Challenging trail system for 4 x 4—possible route of FR69 at Jacks Canyon, or the 82 road along Jaycox Mountain.
- Enforcement.
- Road system that is closed unless signed open.
- Licensed vehicles only allowed on Forest roads.
- More Forest Service presence—patrols.
- Public education through multiple outlets.
- Designate a loop motorized trail system around subdivisions.

- Volunteers for education.
- Create an off-road use area
- Establish partnerships with interested organizations, e.g. user groups, to co-manage trails and fund work in the area.
- Publish a map or area guide w/ user experiences (loop, expert trails, motorcycles only etc.) so the public has info to comply w/ area management.

Ponderosa Pine/Pinyon-juniper/Arizona Fescue/Blue Grama Possible Management Actions

The following are possible management actions for the Ponderosa Pine/Pinyon-juniper/Arizona Fescue/Blue Grama vegetation type.

Possible Vegetative Treatments Possible Management Actions:

- Select thinning in overstocked areas using a silvicultural prescription.
- Improved grazing strategy.
- Use structural (fences, water distribution) and non-structural improvements (grazing rotations) to improve distribution of cattle and control use of understory plants especially in years with low herbaceous productivity.
- Select burning practices including (fire use policy, confine strategy, prescribed burns under proper fuel conditions to produce low burn severities in excessive fueled areas.

Soil Condition Possible Management Actions:

- Lop and scatter to protect and promote understory plant growth when treating overstory vegetation.
- Seeding native species identified in PPC.
- Improved grazing strategy (rotations and deferred grazing until soil is improved)
- Manage grazing on wet soils.
- Select appropriate prescribed burning practices where warranted. Lop and scatter preferred unless heavy fuel loads exist. Where burning needed, fuel conditions should result in low burn severities.

Fire Regime Possible Management Actions:

- Select burning practices (fire use policy, confine strategy, appropriate suppression response, prescribed fire under proper fuel conditions.
- Complete analysis for implementing fire use for resource benefits across Anderson Mesa.

Wildlife Habitat Improvement Possible Management Actions:

- Possible vegetation and possible fire regimes management actions listed above are the means to improve or maintain wildlife habitat in this vegetation zone.

Dispersed Recreation Possible Management Actions:

- On a case-by-case basis, concentrated use dispersed camping areas has been considered for management with fees and by concessionaire in order to provide desirable experiences and for protection of resources
- Designate transportation system in order to manage campsite locations.
- Designate dispersed sites.
- User fee w/ developed sanitation facilities.
- Prohibit camping along Ashurst road.
- Develop alternative locations to dispersed camping along Ashurst road.
- No change from current. . Do not close any informal camping areas or change any use type of existing camping areas
- Day use only along Ashurst road.
- Designate large group camp sites.
- Fee demo for Ashurst.
- Develop map (for fee) or handout showing where developed, designated dispersed and dispersed camping is available on the forest so making it easy for people to find a location to camp.

Outfitter Guide/Big Game Hunting Possible Management Actions:

- Complete O&G Needs Assessments to determine the type/quantity of O&G activities for this area
- Manage outfitter guides to standard.
- Forest Service compliance checks on outfitter guide permits.
- Surcharge on outfitter guide permits for road repair.
- Contingency fund w/ Arizona Game and Fish and the Forest Service for road repair. Fund must be able to roll over from year-to-year.
- Seasonal road closure for motorized game retrieval in Padre Canyon roadless area.
- Require the use of ATV's rather than 4 x 4 vehicular retrieval of game.
- Require no off-road vehicle game retrieval.
- Provide different hunt experience levels.
- Provide quiet areas w/ seasonal closures.
- Seasonal closure for hunt areas if road system is impassable.
- Surcharge on hunt tags for road repair.
- Encourage non-motorized hunting opportunities.
- Work with AG&FD to best time hunts for resource protection.
- Better define and enforce when roads should not be used (i.e. wet) to minimize road repairs

OHV Possible Management Actions:

- A motorized trail system has been identified and implemented offering short and long-distance OHV and 4-WD recreation.
- Create a road/trail system the offers a variety of user experiences (designated trail and road system) such as:
  1) Single track trail for motorcycles.

2) Long distance motorized trail. (Possible route for long-distance motorized trail on the 82 road.)
3) Challenging trail system for 4 x 4—possible route of FR69 at Jacks Canyon, or the 82 road along Jaycox Mountain.

- Enforcement.
- Road system that is closed unless signed open.
- Licensed vehicles only allowed on Forest roads.
- More Forest Service presence—patrols.
- Public education through multiple outlets.
- Designate a loop motorized trail system around subdivisions.
- Volunteers for education.
- Create an off-road use area
- Establish partnerships with interested organizations, e.g. user groups, to co-manage trails and fund work in the area.
- Publish a map or area guide w/ user experiences (loop, expert trails, motorcycles only etc.) so the public has info to comply w/ area management.

Ponderosa Pine/Gambel Oak/Mixed Conifer Possible Management Actions

The following are possible management actions for the Ponderosa Pine/Gambel Oak/Mixed Conifer vegetation type.

Possible Vegetative Treatments Possible Management Actions:

- Select thinning in overstocked areas with silvicultural prescription.
- Leave a mosaic of mixed seral stages across the landscape.
- Emphasize increased herbaceous understories through select thinning in TES map units 582 and 584.
- Select burning practices including (fire use policy, confine strategy, prescribed burns under proper fuel conditions to produce low burn severities in excessive fueled areas.

Soil Condition Possible Management Actions:

- Lop and scatter to protect and promote understory plant growth when treating overstory vegetation.
- Seeding native species identified in PPC.
- Improved grazing strategy (rotations and deferred grazing until soil is improved)
- Manage grazing on wet soils.
- Select appropriate prescribed burning practices where warranted. Lop and scatter preferred unless heavy fuel loads exist. Where burning needed, fuel conditions should result in low burn severities.

Fire Regime Possible Management Actions:

- Select burning practices (fire use policy, confine strategy, appropriate suppression response, prescribed fire under proper fuel conditions.

- Complete analysis for implementing fire use for resource benefits across Anderson Mesa.

Wildlife Habitat Improvement Possible Management Actions:

- Possible vegetation and possible fire regimes management actions listed above are the means to improve or maintain wildlife habitat in this vegetation zone.
- Manage where potential exists for improved browse.
- Select canopy reduction (open canopies) with emphasis on removal of younger growth junipers and young growth ponderosa pine, yet promoting uneven-age forest management.
- Prescribed burning, fire-use policy, or confine strategy for wildfires to reduce juniper growth and maintain openings.
- Open ponderosa pine canopies on sites with buckbrush potential. Prescribe burn on these sites to promote germination of buckbrush.
- Seeding native shrubs identified in PPC seems to be unproven but worthy of testing.
- Lop and scatter, and slash management around existing plants to protect and promote plant growth.
- Remove competing trees around Gambel oak.
- Reduce road density in deer habitat to 1 mile/square mile.
- Seasonal closure in deer habitat areas during fawning and the breeding.
- In cooperation with Arizona Game and Fish, reduce deer tags in hunt units on Anderson Mesa.
- Designate sanctuaries, designate roadless areas, and establish seasonal closure areas.
- Expand existing seasonal closures

Dispersed Recreation Possible Management Actions:

- On a case-by-case basis, concentrated use dispersed camping areas has been considered for management with fees and by concessionaire in order to provide desirable experiences and for protection of resources
- Designate transportation system in order to manage campsite locations.
- Designate dispersed sites.
- User fee w/ developed sanitation facilities.
- Prohibit camping along Ashurst road.
- Develop alternative locations to dispersed camping along Ashurst road.
- No change from current. . Do not close any informal camping areas or change any use type of existing camping areas
- Day use only along Ashurst road.
- Designate large group camp sites.
- Fee demo for Ashurst.
- Develop map (for fee) or handout showing where developed, designated dispersed and dispersed camping is available on the forest so making it easy for people to find a location to camp.

Outfitter Guide/Big Game Hunting Possible Management Actions:

- Complete O&G Needs Assessments to determine the type/quantity of O&G activities for this area
- Manage outfitter guides to standard.
- Forest Service compliance checks on outfitter guide permits.
- Surcharge on outfitter guide permits for road repair.
- Contingency fund w/ Arizona Game and Fish and the Forest Service for road repair. Fund must be able to roll over from year-to-year.
- Seasonal road closure for motorized game retrieval in Padre Canyon roadless area.
- Require the use of ATV's rather than 4 x 4 vehicular retrieval of game.
- Require no off-road vehicle game retrieval.
- Provide different hunt experience levels.
- Provide quiet areas w/ seasonal closures.
- Seasonal closure for hunt areas if road system is impassable.
- Surcharge on hunt tags for road repair.
- Encourage non-motorized hunting opportunities.
- Work with AG&FD to best time hunts for resource protection.
- Better define and enforce when roads should not be used (i.e. wet) to minimize road repairs

OHV Possible Management Actions:

- A motorized trail system has been identified and implemented offering short and long-distance OHV and 4-WD recreation.
- Create a road/trail system the offers a variety of user experiences (designated trail and road system) such as:
  1) Single track trail for motorcycles.
  2) Long distance motorized trail. (Possible route for long-distance motorized trail on the 82 road.)
  3) Challenging trail system for 4 x 4—possible route of FR69 at Jacks Canyon, or the 82 road along Jaycox Mountain.
- Enforcement.
- Road system that is closed unless signed open.
- Licensed vehicles only allowed on Forest roads.
- More Forest Service presence—patrols.
- Public education through multiple outlets.
- Designate a loop motorized trail system around subdivisions.
- Volunteers for education.
- Create an off-road use area
- Establish partnerships with interested organizations, e.g. user groups, to co-manage trails and fund work in the area.
- Publish a map or area guide w/ user experiences (loop, expert trails, motorcycles only etc.) so the public has info to comply w/ area management.

Private Lands Possible Management Actions:

- Identify parcels that would be desirable for Forest Service land acquisition.
- Explore options for purchase of inholdings that are desirable for land acquisition.
- Acquire inholdings through partnerships with interested organizations, e.g. Rocky Mt. Elk Foundation, Trust for Public Lands, and others.

Non-stocked PJ Woodlands Possible Management Actions

The following are possible management actions for the non-stocked PJ woodland vegetation type.

Possible Vegetative Treatments Possible Management Actions:

- No crested wheatgrass to be used in future seed mixes.
- Use structural (fences, water distribution) and non-structural improvements (grazing rotations) to improve distribution of cattle and control use of understory plants especially in years with low herbaceous productivity.
- Select canopy reduction in pj to maintain openings.
- Leave a mosaic of seral stages (some sites to succeed toward pj woodland potential (site and pattern TBD by IDT).
- Seeding native species identified in PPC.

Soil Condition Possible Management Actions:

- Lop and scatter to protect and promote understory plant growth when treating overstory vegetation.
- Seeding native species identified in PPC.
- Improved grazing strategy (rotations and deferred grazing until soil is improved)
- Manage grazing on wet soils.
- Select appropriate prescribed burning practices where warranted. Lop and scatter preferred unless heavy fuel loads exist. Where burning needed, fuel conditions should result in low burn severities.

Fire Regime Possible Management Actions:

- Prescribed burning, fire-use policy, or confine strategy for wildfires to reduce juniper growth and maintain openings.
- Complete analysis for implementing fire use for resource benefits across Anderson Mesa.

Wildlife Habitat Improvement Possible Management Actions:

- Possible vegetation and possible fire regimes management actions listed above are the means to improve or maintain wildlife habitat in this vegetation zone.
- .Manage where potential exists for improved browse.
- Select canopy reduction (open canopies) with emphasis on removal of younger growth junipers and young growth ponderosa pine.
- Prescribed burning, fire-use policy, or confine strategy for wildfires to reduce juniper growth and maintain openings.
- Seeding native shrubs identified in PPC seems to be unproven but worthy of testing.

- Soil disturbance and scarification to provide seedbed for shrub reproduction. Careful not to expose highly calcareous subsoil.
- Lop and scatter, and slash management around existing plants to protect and promote plant growth.
- Reduce road density in deer habitat to 1 mile/square mile.
- Seasonal closure in deer habitat areas during fawning and the breeding.
- In cooperation with Arizona Game and Fish, reduce deer tags in hunt units on Anderson Mesa.
- Remove fences to reduce impediments to animal movement.
- Reconstruct fences to pronghorn antelope standards to reduce impediments to animal movement.
- Thin encroachment trees to reduce impediments to animal movement.
- Remove old slash carcasses from pushes by grinding, windrowing, or burning to reduce impediments to animal movement.
- Tie vegetative treatments to collar data for disconnects between herds.
- Remove or relocate fences directly adjacent to roads.
- Designate sanctuaries, designate roadless areas, and establish seasonal closure areas.
- Expand existing seasonal closures

Dispersed Recreation Possible Management Actions:

- On a case-by-case basis, concentrated use dispersed camping areas has been considered for management with fees and by concessionaire in order to provide desirable experiences and for protection of resources
- Designate transportation system in order to manage campsite locations.
- Designate dispersed sites.
- User fee w/ developed sanitation facilities.
- Prohibit camping along Ashurst road.
- Develop alternative locations to dispersed camping along Ashurst road.
- No change from current. . Do not close any informal camping areas or change any use type of existing camping areas
- Day use only along Ashurst road.
- Designate large group camp sites.
- Fee demo for Ashurst.
- Develop map (for fee) or handout showing where developed, designated dispersed and dispersed camping is available on the forest so making it easy for people to find a location to camp.

Outfitter Guide/Big Game Hunting Possible Management Actions:

- Complete O&G Needs Assessments to determine the type/quantity of O&G activities for this area
- Manage outfitter guides to standard.
- Forest Service compliance checks on outfitter guide permits.
- Surcharge on outfitter guide permits for road repair.

- Contingency fund w/ Arizona Game and Fish and the Forest Service for road repair. Fund must be able to roll over from year-to-year.
- Seasonal road closure for motorized game retrieval in Padre Canyon roadless area.
- Require the use of ATV's rather than 4 x 4 vehicular retrieval of game.
- Require no off-road vehicle game retrieval.
- Provide different hunt experience levels.
- Provide quiet areas w/ seasonal closures.
- Seasonal closure for hunt areas if road system is impassable.
- Surcharge on hunt tags for road repair.
- Encourage non-motorized hunting opportunities.
- Work with AG&FD to best time hunts for resource protection.
- Better define and enforce when roads should not be used (i.e. wet) to minimize road repairs

OHV Possible Management Actions:

- A motorized trail system has been identified and implemented offering short and long-distance OHV and 4-WD recreation.
- Create a road/trail system the offers a variety of user experiences (designated trail and road system) such as:
  1) Single track trail for motorcycles.
  2) Long distance motorized trail. (Possible route for long-distance motorized trail on 82 road.)
  3) Challenging trail system for 4 x 4—possible route of FR69 at Jacks Canyon, or 82 road along Jaycox Mountain.
- Enforcement.
- Road system that is closed unless signed open.
- Licensed vehicles only allowed on Forest roads.
- More Forest Service presence—patrols.
- Public education through multiple outlets.
- Designate a loop motorized trail system around subdivisions.
- Volunteers for education.
- Create an off-road use area
- Establish partnerships with interested organizations, e.g. user groups, to co-manage trails and fund work in the area.
- Publish a map or area guide w/ user experiences (loop, expert trails, motorcycles only etc.) so the public has info to comply w/ area management.

Private Lands Possible Management Actions:

- Identify parcels that would be desirable for Forest Service land acquisition.
- Explore options for purchase of inholdings that are desirable for land acquisition.
- Acquire inholdings through partnerships with interested organizations, e.g. Rocky Mt. Elk Foundation, Trust for Public Lands, and others.

Wet Meadows Possible Management Actions

The following are possible management actions for the wet meadows vegetation type.

Wetlands Possible Management Actions:

- Management of cattle grazing through AOI when monitoring displays a need for change (different grazing strategies).
- Recommendations to Arizona Game And Fish on hunt numbers for elk/deer
- Fencing when necessary.
- Monitoring of use in temporary and seasonal and semi-permanent wetlands.
- Manage seasonal and semi-permanent wetlands with temporary and ephemeral wetlands to create a wetland complex that has a variety of wetland habitat types in close proximity. Possible examples could be Gonzalo No 1 tank with Pine/Camillo/Mud Lake; Daze Lake with Hay Lake/Tremaine/Soldier Lake/ Soldier Annex/ Long Lake.
- Remove roads from wetland basins.
- Implement off-road vehicle travel restrictions.
- Fence and provide lanes to stock ponds.
- Use of annual operating instructions to adjust grazing schedules during dry/wet cycles.
- Designate stock ponds that will be left in wetlands for wildlife habitat. Criteria to review for retaining a stock pond should include at a minimum the following criteria: the location and dependability of adjacent waters, current water uses and rights, relative size of stock pond to wetland, relation of water to surrounding habitat.
- Designate stock ponds to be removed to maximize wetland potential. Criteria to review for removing a stock pond should include at a minimum the following criteria: the location and dependability of adjacent waters, current water uses and rights, relative size of stock pond to wetland, relation of water to surrounding habitat and other wetlands, the frequency of inundation of the wetland, whether the stock pond is the reason why the site is a wetland or not, the impacts of creating additional waters, the use of the site and the surrounding water sites without the stock pond.
- Create additional waters outside of wetlands to improve distribution of grazing animals.
- Improve adjacent waters away from wetlands.
- Monitor the effects of stock ponds on wetlands. Criteria to monitor include: wetted area perimeter, hydric soil extent, change in organic matter, and change in plant species composition, animal use, and macroinvertebrates.
- Remove stock ponds from selected wetlands and monitor changes in pre- and post treatment. Criteria to monitor include: wetted area perimeter, hydric soil extent, change in organic matter, the change in plant species composition, animal use, and macroinvertebrates.
- Manage seasonal and semi-permanent wetlands to create a wetland complex that has a variety of wetland types in close proximity. Possible examples could be Pine/Camillo/Mud Lake; Fisher Fry, Vail, Prime, Marshall, Little Dry Lake complex.

- Keep dams at Perry, Melatone, Corner and Yeager to maintain water on site.
- Remove stock ponds that capture water before the water gets to the wetland (e.g.: Boot Lake).
- Remove upland overstory vegetation and lop and scatter slash to maintain or improve upland soil conditions to attain suitable water quality from upland runoff.
- Do not issue special use permits for activities within wetland basins.
- Select the key productive wetlands, utilize 50% of these solely for wildlife (birds and animals). Adjust graze schedules on the other 50% to preclude grazing during spring/summer breeding periods.
- Remove tanks in 50% of selected wetlands, returning them to a natural condition. Of the other 50%, fence off proper buffer zones around the wetlands, allowing narrow fenced access by ungulates to water.
- Create/maintain permanent plant monitoring sites in all wetland types.
- Monitor plant species composition as budgets allow.
- Use volunteers to monitor plant species composition.
- At reservoir sites, fence to protect woody riparian species and restrict grazing ungulates from woody species—fence types may vary from cattle-proof to elk-proof.
- At reservoir sites, plant native species and protect additional woody vegetation.
- Use chemical grazing inhibitors to protect woody riparian vegetation at reservoirs.
- Maintain or attain proper functioning condition of riparian areas by the year 2009.
- The key productive wetlands on Anderson Mesa are those wetlands rated Seasonal and above by the CNF.
- All wetlands rated Seasonal and above should be managed exclusively for wildlife and all livestock water should be provided elsewhere. Any man-made diversion that interrupts the flow of water to any wetland should be eliminated. Downstream wetlands from permanent waters could be exempted.
- Water lanes, for the purpose of watering livestock in the wetlands ranked Seasonal and above shall be prohibited.
- The uplands within each wetland watershed ranked Seasonal and above shall be managed in a more natural (less grazing pressure) manner that reduces most of or eliminates soil erosion and the resulting siltation of the wetland and in turn, the increased turbidity of the water found there.

Riparian Streams and Springs Possible Management Actions:

- Management of cattle grazing through permit (different grazing strategies).
- Recommendations to Arizona Game And Fish on hunt numbers for elk/deer
- Implement off-road vehicle travel restrictions adjacent to riparian sites.
- Fencing when necessary.
- Exclude grazing to protect and
- Maintain bank vegetation through management actions.
- Provide animal water away from stream banks.
- Use of annual operating instructions to make adjustments in grazing schedules as necessary.
- Monitoring proper functioning condition at least once per decade for trend.

- Designation and control of recreation/trails in Jacks Canyon climbing area.
- Composting toilet facility located near the bottom of Jacks Canyon associated with the Jack's Canyon climbing area.
- Install raised culvert array on 124H road at Sawmill Springs to create ponded wetland and maintain stable road crossing and minimize sediments at Sawmill Springs (maintain PFC).
- Geologic map of spring site to determine aquifer size to determine extent of potential overstory treatment.
- Remove overstory adjacent to springs through mechanical means or fire. Fire could include planned prescribed burns, wildland fire use, or appropriate suppression.
- Maintain removed overstory with mechanical means or fire. Fire could include planned prescribed burns, wildland fire use, or appropriate suppression.
- Maintain flows in Upper Clear Creek through input in management to Blue Ridge Reservoir (out of analysis area).
- Manage any new potential groundwater pumping on Forest Service land adjacent to Lower Clear Creek.
- Maintain or attain proper functioning condition of riparian areas by the year 2009.

Soil Condition Possible Management Actions:

- Implement minimum stubble heights to maintain vegetation for soil nutrient cycling.
- Management of cattle grazing through AOI when monitoring displays a need for change (different grazing strategies).
- Recommendations to Arizona Game and Fish on hunt numbers for elk/deer.
- Fencing when necessary (cattle and/or elk).
- Remove roads from wetland basins to minimize compaction.
- Implement off-road vehicle travel restrictions to minimize compaction and minimize impacts to vegetative community.
- Use of annual operating instructions to make adjustments in grazing schedules as necessary.
- Monitoring of use in all wetland types, specifically vegetative ground cover.
- Developing site specific stubble heights by climatic regime, by wetland type to ensure biomass is left on-site for nutrient cycling.
- Creating off-site waters to minimize use and retain biomass on-site.
- Designate stock ponds to be removed to minimize biomass removal. Criteria to review for removing a stock pond should include at a minimum the following criteria: the location and dependability of adjacent waters, current water uses and rights, relative size of stock pond to wetland, relation of water to surrounding habitat and other wetlands, the frequency of inundation of the wetland, whether the stock pond is the reason why the site is a wetland or not, the impacts of creating additional waters, the use of the site and the surrounding water sites without the stock pond.
- Augment soil biomass with soil amendments.
- Limit/remove recreation use on impaired soils.

Wildlife Habitat Improvement Possible Management Actions:

- ID monitoring sites within key wetlands.
- Add slash in uplands to create cover and nesting habitat.
- Add rock in uplands to create habitat.
- Utilize stubble heights specific to wetland types and their associated uplands for habitat attributes (see wetland discussion for potential stubble heights in wetlands). Stubble heights for nesting habitat in uplands within ¼ mile of wetlands that produce emergent vegetation should be tied to species present.
- Seed native upland species that provide greater hiding cover potential. This could be grasses or shrubs. Tie species seeded to site potential.
- Designate sanctuaries, designate roadless areas, establish seasonal closure areas.
- Expand existing seasonal closures
- Remove and/or relocate roads within 100 meters of seasonal and semi-permanent roads.
- In cooperation with partners, assess the need for habitat structures in Ashurst, Tremaine and Kinnikinick Lakes.
- Use woody vegetation from adjacent vegetative treatments for fish structures.
- Plant submerged aquatic vegetation for fish habitat structures.
- Renovate Ashurst by clearing out silt and crayfish to create blue ribbon fishery. Kinnikinick and Long Lakes can also be considered for this treatment.
- Initiate pro-active programs that encourage the re-stocking of Anderson Mesa with Gunnison's Prairie Dogs. Encourage volunteers to engage in this effort.
- To successfully manage for sustainable pronghorn populations, the CNF should initiate monitoring and management practices that identifies as well as promotes the preferred forage for pronghorn.
- Future management actions must allow adequate residual cover to remain on the ground through the fall and winter months and remain there, through the spring fawning season. The desired amount of cover is 10". That cover should be taken out of livestock production and dedicated towards healthy wildlife populations.
- Initiate the re-seeding of native grasses and forbs in areas that pronghorn use.
- Control the grazing of cattle in an equitable degree with elk and to a reduced level that does not negate any benefit to pronghorn.

Jacks Canyon Climbing Area Possible Management Actions:

- Options at Jacks Canyon are for primitive vs. developed site management then write a management plan to fit that option.
- Write management plan for Jacks Canyon Climbing area. Management plan should address potential target group (local climbers, national-level climbing area; consideration of Outfitter Guide needs and/or/vs. keeping the area open to public) parameters for vehicle access, trails, sanitation, boundaries of the site etc to reduce current resource impacts.
- Designate trailhead and trail system within canyon.
- Designate no cross-country hiking travel.

- Explore option of a toilet located within the canyon to reduce sanitation issues in the canyon.
- Establish working relationship with interested climbing groups for work at the site, for grants, etc.
- Develop a Recreation Opportunity Guide (ROG) for the area.

Inventoried Roadless Areas Possible Management Actions:

- Decommission roads in designated IRA's areas. Ensure roads remaining minimize effects to resources such as archaeological sites, caves, sensitive wildlife/plant locations.
- Create off-road vehicle closure area adjacent to the IRA.
- Create roadless buffer around the IRA's.
- Sign the IRA's as off-road vehicle prohibited areas.
- Manage to provide specific experiences such as hunting (foot/horse archery) & possibly add other restrictions to provide this experience.
- Designate campsites to reduce the potential for off-road use or social roads.
- Maintain and restore damaged areas.
- Sign and interpret IRA's for effective management.

Developed Recreation Possible Management Actions:

- Possible Management Actions at Ashurst Lake
    1. Decommission Ashurst and Forked Pine Campgrounds for overnight stays and convert to day-use.
    2. Upgrade area for day use including boat ramp (drought conditions), accessible toilet, parking
    3. Create a third camping loop off Anderson Mesa at Pinegrove Campground, 40 – 50 sites.
    4. Utilize public affairs office to note the change in management at Ashurst Lake.
    5. User fee w/ developed sanitation facilities at designated dispersed sites along Ashurst Road.
    6. No change from current. . Do not close any informal camping areas or change any use type of existing camping areas
    7. Designate large group campsites, e.g. at Perry Lake pit, Mormon Canyon, etc.
    8. Establish fee demo status for Ashurst Lake area to obtain funds to effectively manage the area.
    9. Manage day use sites at Ashurst for user satisfaction and resource protection, e.g. reconstruct facilities as needed; rehabilitate damaged areas and closed camp areas and roads.
- Sport Fishing Possible Management Actions:
    1. Lakes are drained and renovated to remove undesirable species,
    2. Warm water fishery at Long/Tremaine; cold water fisheries at Kinnikinick, Ashurst, Coconino and Morton. Manage Ashurst as a blue ribbon fishery.
    3. Renovate (chemical) Ashurst and Coconino.
    4. Tremaine is not a sport fishery.

5. Work with interested parties to manage fisheries, including Arizona Game and Fish Department, fishing groups, etc.; cooperate to obtain grants to reconstruct and maintain facilities as needed.
6. Develop interpretive theme for the area, design and install materials and displays with full spectrum of site and area information, including about resources, LNT, fisheries management, etc.

- Develop vegetation management plan for each developed recreation site using Forest Service employees.
- Contract vegetation management plan.
- Utilize NAU graduate student to create vegetation management plan.
- Through partnerships, obtain grant funding and other sources to maintain and replant developed areas as needed.
- Integrate vegetation management implementation into Concessionaire permit .
- Consider decommissioning recreation sites that are severely affected by vegetation loss (or affecting visitor experience).

Outfitter Guide/Big Game Hunting Possible Management Actions:

- Complete Outfitter Guide Needs Assessments to determine the type/quantity of Outfitter Guide activities for this area
- Manage outfitter guides to standard.
- Forest Service compliance checks on outfitter guide permits.
- Surcharge on outfitter guide permits for road repair.
- Contingency fund w/ Arizona Game and Fish and the Forest Service for road repair. Fund must be able to roll over from year-to-year.
- Require the use of ATV's rather than 4 x 4 vehicular retrieval of game.
- Require no off-road vehicle game retrieval.
- Provide different hunt experience levels.
- Provide quiet areas w/ seasonal closures.
- Seasonal closure for hunt areas if road system is impassable.
- Surcharge on hunt tags for road repair.
- Encourage non-motorized hunting opportunities.
- Work with Arizona Game and Fish Department to best time hunts for resource protection.
- Better define and enforce when roads should not be used (i.e. wet) to minimize road repairs

OHV Possible Management Actions:

- Enforcement.
- Road system that is closed unless signed open.
- Licensed vehicles only allowed on Forest roads.
- More Forest Service presence—patrols.
- Public education through multiple outlets.
- Volunteers for education.
- Establish partnerships with interested organizations, e.g. user groups, to co-manage trails and fund work in the area.

- Publish a map or area guide w/ user experiences (loop, expert trails, motorcycles only etc.) so the public has info to comply w/ area management.

Hay Lake Possible Management Actions

The following are possible management actions for the Hay Lake Complex. These possible management actions are a collaborative effort between the Coconino National Forest, Other Agencies and the Citizens Working Group.

Road Use Designation to Manage the Wetland Easement Possible Management Actions:

- Designate unclassified roads 123, 126, and 132 as system roads for access to headgate structures and maintenance.

Road Management Possible Management Actions:

- Designate the road system as follows:

  Open Road-- Level 3

  Designate FR 82 from southern boundary to junction FR 653 as a level 3 road.

  Open Road-- Level 2

  Designate the following roads as level 2 roads: 9729C, 69B, 653, 9719Y, 9722C, 9724D (from beginning to 9719B junction and from junction 9727D to junction 9716B), 9719B, 82M, 82L 653A (FR82 to FR 135 junction), 82K, 9716T, 9716Q, 9716R, 9727D, FR 135 (FR653A junction to upper end of Tremaine lake), unclassified roads 123, 126, and 132 as system roads for access to headgate structures and maintenance of wetland easement. FR653 may be level 3 to improve access to Soldier Lake and Soldier Lake Annex. At a minimum, it needs spot fill to create one single road bed rather than braided system as is now. FR 653A also needs improved to provide access to south end of Soldier Lake annex and to north end of Tremaine Lake.

  Relocate/reconstruct Unclassified Road 132 as level 2/3 for access to birding area.

  Decommission the following roads:

  9719N, redundant segments of 9719Y, 653 (from east termini w/ 82 road to 653B junction), 9716P, 9725D, 9719F, 9719C, 9724D (from junction 9719B to junction 9727D and from junction 69B to junction 9716B), 135 (from west boundary to top of Tremaine Lake), 9719J, 9719H, unclassified road214, unclassified road215, unclassified road 134, unclassified road127, unclassified road136, unclassified road129, unclassified road116, and unclassified road 119.

Water Delivery System Possible Management Actions:

- Inspect water delivery structures annually.

- Create a Water Management Plan for the Hay Lake Complex needs to be developed and written in cooperation with NRCS and the Hay Lake Water Group.
- Do not manage Tremaine Lake as a fishery, rather, manage Soldier Lake and Soldier Lake Annex as fishery.

Tremaine Lake Possible Management Actions:

- Do not manage Tremaine Lake as a fishery Manage Tremaine Lake for waterfowl and other wildlife.; rather, manage Soldier Lake and Soldier Lake Annex as fishery.
- Create access (road and boat ramp) from unclassified road 132.
- Create seasonal use restriction to protect road beds.
- Create foot access only through trail system on south side of Tremaine Lake via Unclassified Road 132 and on north side of lake via FR 653A and FR 135. Create parking areas for 3-5 vehicles at road terminus for north and south access routes at Tremaine Lake.
- Interpretation of watchable wildlife at trailheads at Tremaine Lake.
- Enhance vegetation production at wetlands for bird hiding/screening cover through plantings and crayfish control/eradication at Tremaine Lake.
- In cooperation with partners, assess the need for habitat structures in Tremaine Lake.

Hay Lake Possible Management Actions:

- Create bird viewing site at East-side of Hay Lake with access from FR 82 via unclassified road 132. Need to re-locate and reconstruct unclassified road 132 for approximately 1.2 miles.
- Create 5 car parking area at birding site at Hay Lake (terminus of unclassified road 132).
- Construct approximately ½ to 1 mile trail from parking area at Hay Lake to lake bed.
- Interpretation of watchable wildlife at trailhead at Hay Lake.

Crayfish Control Possible Management Actions:

- Control crayfish populations with the following means:
  1. Stock with small mouth bass to feed on crayfish.
  2. Chemical treatment and monitor chemical treatment options.
  3. Crayfish sterilization.
- Monitoring of aquatic vegetation in Hay Lake.

Hay Lake Complex Overall Possible Management Strategies

- Utilize CWG to create management direction.
- Utilize adjacent management direction from the current Forest Plan for like habitat types.
- Manage Hay Lake in a lakes complex including Tremaine Lake, Soldier Annex Lake, Soldier Lake, Long Lake, and Hay Lake. Management emphasis is for recreation, watershed condition and wildlife in concert with other uses.

- Manage Long Lake as a warm water fishery.

Long Lake Developed Recreation Possible Management Actions:

- Use woody vegetation from adjacent vegetative treatments for fish structures.
- Plant submerged aquatic vegetation for fish habitat structures.
- Consider Long Lake as a renovation site by clearing out silt and crayfish to create blue ribbon fishery.

Outfitter Guide/Big Game Hunting Possible Management Actions:

- Complete O&G Needs Assessments to determine the type/quantity of O&G activities for this area
- Manage outfitter guides to standard.
- Forest Service compliance checks on outfitter guide permits.
- Surcharge on outfitter guide permits for road repair.
- Contingency fund w/ Arizona Game and Fish and the Forest Service for road repair. Fund must be able to roll over from year-to-year.
- Require the use of ATV's rather than 4 x 4 vehicular retrieval of game.
- Require no off-road vehicle game retrieval.
- Provide different hunt experience levels.
- Provide quiet areas w/ seasonal closures.
- Seasonal closure for hunt areas if road system is impassable.
- Surcharge on hunt tags for road repair.
- Encourage non-motorized hunting opportunities.
- Work with AG&FD to best time hunts for resource protection.
- Better define and enforce when roads should not be used (i.e. wet) to minimize road repairs

OHV Possible Management Actions:

- Enforcement.
- Road system that is closed unless signed open.
- Licensed vehicles only allowed on Forest roads.
- More Forest Service presence—patrols.
- Public education through multiple outlets.
- Volunteers for education.
- Establish partnerships with interested organizations, e.g. user groups, to co-manage trails and fund work in the area.
- Publish a map or area guide w/ user experiences (loop, expert trails, motorcycles only etc.) so the public has info to comply w/ area management.

Forest Plan Consistency

The possible management actions proposed above, for the most part, meet current Forest Plan guidance. The following discussion will outline where the proposed management actions do not meet current Forest Plan guidance. Where the current Forest Plan guidance is lacking, this is a potential where a Forest Plan amendment may be appropriate, or where the change in the Forest Plan could be done through the upcoming Forest Plan revision. For specific references to the Forest Plan standards and guidelines for each proposed management action, please review the individual specialist reports.

Forest Plan Consistency with Possible Management Actions Common to All Vegetation Zones

For activities that relate to the Scenery Management System (SM System), the plan is silent because this is a new system to measure visual attributes on the Forest. The guidance in the Forest Plan is implied through the Visual Quality Objectives on page 60 of the Plan, but is silent to the specifics outlined in the SM System. All other proposed management actions that are outlined in the possible management actions common to all vegetation zones are in compliance with the Forest Plan as written.

Pinyon-Juniper Woodland Forest Plan Consistency with Possible Management Actions

The management guidance for this vegetation type is found within Management Area 7 within the Forest Plan. A potential major disconnect, or contradiction, with current Forest Plan guidance can occur with the implementation of the management strategy that removes most of the young growth junipers to improve herbaceous growth and productivity. This activity could potentially result in a primarily even-aged stand of pinyon-junipers. This is in conflict with current management direction for the northern goshawk that states that pinyon-juniper should be managed for uneven-aged conditions.

At the same time, the Forest Plan supports actions to move soils to satisfactory, which canopy reduction in sites that exceed 40%, will aid in moving the site toward a satisfactory soil condition. There appears to be a need to amend the Forest Plan if this action is to be implemented. The amendment would need to better define where northern goshawk habitat is in the pinyon-juniper type and manage accordingly for those sites and not the entire pinyon-juniper habitat.

The present Forest Plan guidance for Management Area 7 (pinyon-juniper woodlands) is to manage on a sustained-yield basis and convertible products in the long-term. The proposed management actions examine this vegetation type more for the ecological function of the type, rather than as a product production emphasis. This is a different philosophy of how this vegetative type should be managed from the current Forest Plan and may need to be a point for revision or amendment.

The current Forest Plan does mention fire use as a possible tool for management, but is not very specific and could be improved. The current Forest Plan guidance for use of

appropriate suppression response fire management (confine, contain, control), limits the acres burned under these strategies to 1,000 acres. There does appear to be a need to prepare a fire use plan for this vegetation type, as well as for Anderson Mesa as a whole. The current Forest Plan is also silent on noxious weed treatments; however the new three forest invasive plants Final Environmental Impact Statement (FEIS) due out this fall will generate an amendment to the Forest Plan to prescribe management of noxious weeds.

Some of the proposed management actions are mentioned in the Forest Plan as possible guidance, but are not specific or explicitly stated. The reduction of road density in proposed deer habitat is not specific to deer habitat, but is specific to vegetation types within the plan. Therefore, this proposal is consistent within this vegetation type, but not within the ponderosa pine type which has a higher proposed miles/square mile than what is proposed in the wildlife section for deer habitat. A possible amendment/revision of the Forest Plan could be to make road management decision based on risk/values associated with the landscape, and not tie the guideline to a specific vegetation type.

The Plan does not recognize climbing as a recreational activity and use in the Anderson Mesa area, and so it does not set standards and guidelines for management of climbing and climbing areas in the area, therefore, the management of the Jacks Canyon Climbing area is absent in the Forest Plan and need management direction added through an amendment or plan revision.

Several proposed management actions within the recreation arena are currently not covered within the Forest Plan for the Anderson Mesa area and need to be reviewed for possible Forest Plan amendment or revision. These include the fee demonstration proposal, prohibiting camping along Ashurst Lake, and the expanding of Pinegrove campground, and the installation of a concessionaire to provide for maintenance. The proposal to decommission Forked Pine and Ashurst (or conversion to day use) is actually in contradiction to current guidance on p 62 of the Plan.

A few of the proposed management actions for Outfitter Guide/ Big Game hunting also are silent in the Forest Plan and need to be reviewed for possible Forest Plan amendment or revision. The suggestion for only ATV retrieval of game and the contingency funding for road repair are currently not discussed in the plan.

Three off highway vehicle proposals are also missing from the Plan, and need to be reviewed for possible Forest Plan amendment or revision. The three include license vehicles only of Forest Service roads, creating an off-road use area, and the Forest is closed unless signed open. The latter suggestion is currently in conflict with current direction, but may be changed through the 5 Forest OHV FEIS, which is due in early 2005.

Western Wheat-Blue Grama Grasslands Forest Plan Consistency with Possible Management Actions

The management guidance for this vegetation type is found within Management Area 9 in the Forest Plan. The temporary and ephemeral wetlands that are also included within

this vegetation type have management guidance that is contained in Management Area 12 of the Forest Plan. Within the western wheat-blue grama grasslands, the Forest Plan is silent on the use of sludge to decrease brome snakeweed populations. The current Forest Plan does mention fire use as a possible tool for management, but is not very specific and could be improved. The current Forest Plan guidance for use of appropriate suppression response fire management (confine, contain, suppress), limits the acres burned under these strategies to 1,000 acres. There does appear to be a need to prepare a fire use plan for this vegetation type, as well as for Anderson Mesa as a whole. The monitoring section within the Forest Plan is weak, and needs improved to be able to utilize adaptive management.

For the wildlife section of the vegetation type, perhaps the largest omission within the Forest Plan is that actions within the Pronghorn Plan are not formerly recognized. There is guidance to cooperate with the Arizona game and Fish Department, but the scope and breadth of the Pronghorn Management Plan may need to be formerly recognized within the Forest Plan. The Plan is also currently silent on the treatment of old, created slash from pushes to improve visual corridors for antelope and also does not discuss the removal of fences near roads, but these are consistent with wildlife habitat improvements needs that are currently outlined in the Plan.

Within the temporary and ephemeral wetlands within the western wheat-blue grama grasslands, the Forest Plan currently does not identify the different potentials for these sites within Management Area 12, nor, the effect climate plays on these sites. The possible management action to manage temporary and ephemerals in connection with seasonal and semi-permanent wetlands in a wetland complex is currently not covered in the Forest Plan, but could be a management emphasis for these areas. The designation of retaining stock ponds on these wetland types could be in conflict with current direction to remove stock tanks if they are causing problems with wetland function. If they are not causing problems with wetland function, then this is not a conflict.

The outfitter guide/big game hunting proposals that currently are silent in the Forest Plan and need to be reviewed for possible Forest Plan amendment or revision are the same as for the pinyon-juniper woodland. The Off-Highway Vehicle (OHV) proposals for this vegetation type that currently are silent in the Forest Plan and need to be reviewed for possible Forest Plan amendment or revision are the same as for the pinyon-juniper woodland.

Montane Meadows Forest Plan Consistency with Possible Management Actions

The management guidance for this vegetation type is found within Management Area 9 of the Forest Plan. Within the mountain meadows vegetation type, the Forest Plan is silent on the use of sludge to decrease brome snakeweed populations. The current Forest Plan does mention fire use as a possible tool for management, but is not very specific and could be improved. The current Forest Plan guidance for use of appropriate suppression response fire management (confine, contain, suppress), limits the acres burned under these strategies to 1,000 acres. There does appear to be a need to prepare a fire use plan for this vegetation type, as well as for Anderson Mesa as a whole. The monitoring

section within the Forest Plan is weak, and needs improved to be able to utilize adaptive management.

For the wildlife section of the vegetation type, the proposal for reducing road densities in deer habitat to one mile/square mile is in conflict with current guidance for the ponderosa pine type within the Forest Plan.

The outfitter guide/big game hunting proposals that currently are silent in the Forest Plan and need to be reviewed for possible Forest Plan amendment or revision are the same as for the pinyon-juniper woodland. The Off-Highway Vehicle (OHV) proposals for this vegetation type that currently are silent in the Forest Plan and need to be reviewed for possible Forest Plan amendment or revision are the same as for the pinyon-juniper woodland.

Pinyon-Juniper/Blue Grama Woodland Forest Plan Consistency with Possible Management Actions

The management guidance for this vegetation type is found within Management Area 7 of the Forest Plan. A potential major disconnect, or contradiction, with current Forest Plan guidance can occur with the implementation of the management strategy that manages this vegetation type with larger openings and as a savannah type, rather than as a pinyon-juniper community. This activity could potentially result in a primarily a sparse, even-aged stand of pinyon-junipers. This is in conflict with current management direction for the northern goshawk that states that pinyon-juniper should be managed for uneven-aged conditions, as well as for thicker canopy cover. It is also in conflict with the current management emphasis for Management Area 7 (pinyon-juniper woodlands) which is to manage on a sustained-yield basis and for convertible products in the long-term. The proposed management actions examine this vegetation type more for the ecological function of the type, rather than as a product production emphasis. This is a different philosophy of how this vegetative type should be managed from the current Forest Plan and may need to be a point for revision or amendment. This specific type may need to be split into a different management area based on the soil type.

At the same time, the Forest Plan supports actions to move soils to satisfactory, which canopy reduction in sites that exceed 40%, will aid in moving the site toward a satisfactory soil condition. There appears to be a need to amend the Forest Plan if this action is to be implemented. The amendment would need to better define where northern goshawk habitat is in the pinyon-juniper type and manage accordingly for those sites and not the entire pinyon-juniper habitat.

The current Forest Plan does mention fire use as a possible tool for management, but is not very specific and could be improved. The current Forest Plan guidance for use of appropriate suppression response fire management (confine, contain, control), limits the acres burned under these strategies to 1,000 acres. There does appear to be a need to prepare a fire use plan for this vegetation type, as well as for Anderson Mesa as a whole. The current Forest Plan is also silent on noxious weed treatments; however the new three

forest invasive plants Final Environmental Impact Statement (FEIS) due out this fall will generate an amendment to the Forest Plan to prescribe management of noxious weeds.

The outfitter guide/big game hunting proposals that currently are silent in the Forest Plan and need to be reviewed for possible Forest Plan amendment or revision are the same as for the pinyon-juniper woodland. The Off-Highway Vehicle (OHV) proposals for this vegetation type that currently are silent in the Forest Plan and need to be reviewed for possible Forest Plan amendment or revision are the same as for the pinyon-juniper woodland.

Ponderosa Pine/Pinyon-juniper/Arizona Fescue/Blue Grama Forest Plan Consistency with Possible Management Actions

The management guidance for this vegetation type is found within Management Area 3 (ponderosa pine), Management Area 6 (Unproductive Timber Land), or Management Area 7 (pinyon juniper). Several dispersed recreation proposed management actions are currently covered by the Forest Plan and need to be reviewed for possible Forest Plan amendment or revision. These include the fee demonstration proposal and the prohibition of camping along Ashurst Lake Road.

The outfitter guide/big game hunting proposals that currently are silent in the Forest Plan and need to be reviewed for possible Forest Plan amendment or revision are the same as for the pinyon-juniper woodland. The Off-Highway Vehicle (OHV) proposals for this vegetation type that currently are silent in the Forest Plan and need to be reviewed for possible Forest Plan amendment or revision are the same as for the pinyon-juniper woodland.

Ponderosa Pine/Gambel Oak/Mixed Conifer Forest Plan Consistency with Possible Management Actions

The management guidance for this vegetation type is found within Management Area 3. A potential major disconnect, or contradiction, with current Forest Plan guidance can occur with the implementation of the management strategy that would manage sites with mollisol soil types (TES map units 582 and 584) more as a savannah. This is in conflict with current management direction for the northern goshawk that states that ponderosa pine should be managed for uneven-aged conditions. Like the pinyon-juniper above, the thinning of primarily small trees only may be in conflict with the goshawk guidelines in the Forest Plan if the end result is an even-aged stand. There appears to be a need to amend the Forest Plan if these actions are to be implemented. The sites with high mollisol soil types across the analysis area may need a different Management Area designation.

The current Forest Plan does mention fire use as a possible tool for management, but is not very specific and could be improved. The current Forest Plan guidance for use of appropriate suppression response fire management (confine, contain, control), limits the acres burned under these strategies to 100 acres in the ponderosa pine type. There does appear to be a need to prepare a fire use plan for this vegetation type, as well as for

Anderson Mesa as a whole. The current Forest Plan is also silent on noxious weed treatments; however the new three forest invasive plants Final Environmental Impact Statement (FEIS) due out this fall will generate an amendment to the Forest Plan to prescribe management of noxious weeds.

The reduction of road density in proposed deer habitat is not specific to deer habitat, but is specific to vegetation types within the plan. The current proposal to reduce road density to 1 mile per square mile is not consistent within this vegetation type (ponderosa pine in the Forest Plan has guidance for 2 miles/square mile). A possible amendment/revision of the Forest Plan could be to make road management decision based on risk/values associated with the landscape, and not tie the guideline to a specific vegetation type.

Several dispersed recreation proposed management actions are currently covered by the Forest Plan and need to be reviewed for possible Forest Plan amendment or revision. These include the fee demonstration proposal and the prohibition of camping along Ashurst Lake Road.

The outfitter guide/big game hunting proposals that currently are silent in the Forest Plan and need to be reviewed for possible Forest Plan amendment or revision are the same as for the pinyon-juniper woodland. The Off-Highway Vehicle (OHV) proposals for this vegetation type that currently are silent in the Forest Plan and need to be reviewed for possible Forest Plan amendment or revision are the same as for the pinyon-juniper woodland.

Non-stocked PJ Woodlands Forest Plan Consistency with Possible Management Actions

The management guidance for this vegetation type is found within Management Area 10 within the Forest Plan. By definition, the non-stocked components of this type fail to meet northern goshawk guidelines currently, and any additional thinning within this type will be in potential conflict with northern goshawk guidelines. . There appears to be a need to amend the Forest Plan if this action is to be implemented. The amendment would need to better define where northern goshawk habitat is in the pinyon-juniper type and manage accordingly for those sites and not the entire pinyon-juniper habitat.

Several dispersed recreation proposed management actions are currently covered by the Forest Plan and need to be reviewed for possible Forest Plan amendment or revision. These include the fee demonstration proposal and the prohibition of camping along Ashurst Lake Road.

The outfitter guide/big game hunting proposals that currently are silent in the Forest Plan and need to be reviewed for possible Forest Plan amendment or revision are the same as for the pinyon-juniper woodland. The Off-Highway Vehicle (OHV) proposals for this vegetation type that currently are silent in the Forest Plan and need to be reviewed for possible Forest Plan amendment or revision are the same as for the pinyon-juniper woodland.

Wet Meadows Forest Plan Consistency with Possible Management Actions

The management guidance for this vegetation type is found within Management Area 12 within the Forest Plan. The Forest Plan currently does not identify the different potentials for these different wetland types within Management Area 12, nor, the effect climate plays on these sites. The possible management action to manage temporary and ephemerals in connection with seasonal and semi-permanent wetlands in a wetland complex is currently not covered in the Forest Plan, but could be a management emphasis for these areas. The designation of retaining stock ponds on these wetland types could be in conflict with current direction to remove stock tanks if they are causing problems with wetland function. If they are not causing problems with wetland function, then this is not a conflict.

Overall, the current Forest Plan does a very harsh and arbitrary split between wetland areas and upland. This is especially true in the case of seasonal and semi-permanent wetlands and surrounding habitat for upland nesting waterfowl. There is a need to update the plan to include upland habitat conditions with these wetland types. There is also a need to include fall migration habitat needs in the Forest Plan (which are currently missing). The stubble height recommendations are currently absent in the Forest Plan and are tied to monitoring needs within these wetland types, which ties directly to monitoring needs. The monitoring outlined within the wetland section in the Forest Plan is currently not what is being proposed in the possible management actions, and needs updated to include adaptive management techniques and monitoring that examines wetland function, especially in relation to stock ponds in wetlands.

As stated above in the pinyon woodland section, the proposed management actions for Jacks Canyon Climbing are currently not directly covered within the Forest Plan. Several proposed management actions within the recreation arena are currently not covered within the Forest Plan for the Anderson Mesa area and need to be reviewed for possible Forest Plan amendment or revision. These include the fee demonstration proposal, prohibiting camping along Ashurst Lake, and the expanding of Pinegrove campground, and the installation of a concessionaire to provide for maintenance. The proposal to decommission Forked Pine and Ashurst (or conversion to day use) is actually in contradiction to current guidance on p 62 of the Plan. Also, the guidance for vegetation management planning is absent form the Forest Plan, but may be covered through facility maintenance that is covered in the Plan.

A few of the proposed management actions for Outfitter Guide/ Big Game hunting also are silent in the Forest Plan and need to be reviewed for possible Forest Plan amendment or revision. The suggestion for only ATV retrieval of game and the contingency funding for road repair are currently not discussed in the plan.

Three off highway vehicle proposals are also missing from the Plan, and need to be reviewed for possible Forest Plan amendment or revision. The three include license vehicles only of Forest Service roads, creating an off-road use area, and the Forest is closed unless signed open. The latter suggestion is currently in conflict with current

direction, but may be changed through the 5 Forest OHV FEIS, which is due in early 2005.

Hay Lake Forest Plan Consistency with Possible Management Actions

The Hay Lake Complex currently has an approximately 6,000 acre portion of the 9,500 acre area that was private when the plan was written and does not, per se, have management direction. The remainder of the area has management guidance outlined within the current Forest Plan in Pinyon-Juniper Woodlands (MA 7), Grassland and Sparse Pinyon-Juniper Above the Rim (MA 10), Unproductive Timber Land, (MA 6), and Riparian and Open Water (MA 12).

Considerations for Forest Planning in the Future

The following observations were brought forward by Tom Sisk and Matthew Loeser from Northern Arizona University concerning the changing environment for future decisions on the Anderson Mesa Landscape Scale Assessment. The comments take a look forward at potential activities that are expected to take place, or are already occurring and may very well affect future management actions on not only Anderson Mesa, but the Coconino National Forest.

- *Climate change* – There is global recognition of climate change, and considerable uncertainty over the degree of the change and its impacts. At a minimum, we should anticipate that plant and animal species will be experiencing novel environmental conditions that will affect their distribution and dynamics. Such change will most severely affect small populations and species currently existing at the edge of their geographic distribution. The AMLA could provide insight into how plant communities and sensitive species, such as pronghorn, might respond to such change, and what management actions might address emerging problems.

- *Growth of the human population* – In the last 2 decades, the greater Flagstaff region has experienced a near doubling in population. This population, in combination with the rapid growth in motorized recreation, especially along the southern boundary of Anderson Mesa, will present many new challenges to managers, including the loss of wildlife habitat, possible interruption of animal movement corridors, increase in disturbance to biodiversity and to livestock operations, and growing enforcement responsibilities for the Forest Service.

- *Development of private lands and inholdings* – Related to the growth in human population, this change in land use and ownership is likely to increase at an increasing rate over the next decade. From a conservationist's point of view, the most damaging turn of events would be the development of private inholdings for private residences. While inholdings on Anderson Mesa are relatively small in number, some are quite large, and most include valuable water resources, so the consequences of development could be far-reaching. Opportunities for landscape-level management would be severely constrained. The cumulative impacts of many management decisions, including the revision of grazing policies, may lead to radical

changes in the use of the private land that are only fully apparent at the landscape scale.

- *Efficient and relevant monitoring* - The monitoring program described by the landscape assessment may not be sufficient to inform future management decisions. Management for multiple objectives is much easier under an adaptive framework that allows adjustment to emerging conditions, as made evident by efficient and timely monitoring of both ecological and social indicators. Anderson Mesa is a good system for trailing an adaptive management approach because it is a distinctive biogeographical unit with fairly developed monitoring plans and a manageable number of stakeholders (relative to other, similarly sized landscapes). The current assessment documents makes no concrete recommendations for how monitoring might be made more efficient and effective to support adaptive management.

The last point is probably the most important, and one in which the current Coconino National Forest Plan is lacking and the Landscape Scale Assessment notes, but does not put many specifics to. As with all planning projects, the environment we work in is constantly changing. These comments help underscore that fact.

Acknowledgements

In closing, the Coconino National Forest wishes to thank all of the members of the Citizen Working Group and our governmental partners for their interest and participation in the Anderson Mesa Landscape Scale Assessment. Together, you all helped meet the Forests' goal of describing the existing and desired conditions for Anderson Mesa, as well as possible management actions to move the existing conditions towards desired conditions. In addition, the Forest learned the different viewpoints considering the management of Anderson Mesa. The Forest hopes that each member also has a better understanding of each others viewpoints considering the management of Anderson Mesa.

What we have just finished is not the end, but just the beginning of our relationship with Anderson Mesa. We look forward to working with you in the future as we begin to take the ideas set forth here into project specific planning and implementation. Thanks again.

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